



**U.S. Army Corps of Engineers  
Southwest Region**

***FINAL***

**Technical Project Planning  
Memorandum  
& Associated Documentation  
Midland Army Airfield  
Midland County, Texas**

FUDS Project No. K06TX019901  
July 2007

*In Support of*  
**FUDS MMRP Site Inspections Project**

*Prepared by:*  
**Parsons**

**5390 Triangle Parkway, Suite 100  
Norcross, Georgia 30092**

*Prepared for:*  
**U.S. Army Corps of Engineers, Fort Worth District  
819 Taylor Street  
Fort Worth, Texas 76102-0300**

*and*  
**SPD Range Support Center**

**Contract: W912DY-04-D-0005  
Task Order: 0009**



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819 Taylor Street  
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**Contract: W912DY-04-D-0005  
Task Order: 0009**

# Technical Project Planning Memo:

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**Subject:** Formerly Used Defense Site Military Munitions Response Program  
Documentation of Technical Project Planning Team Concurrence for Site  
Inspection Phase

**Site:** *Midland Army Airfield, K06TX019901, Midland County, Texas*

**Contract:** Contract Number W912DY-04-D-0005, Delivery Order 0009

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This document is intended to record the conduct of Technical Project Planning (TPP) for *Midland Army Airfield* (Midland AAF). The TPP Team members listed below indicated concurrence with the Site Inspection (SI) Technical Approach as developed during the TPP meeting held at the Texas Commission on Environmental Quality (TCEQ) Midland Office in Midland, TX on April 18, 2007 from 9:00 to 11:00 am. Four target ranges (No. 13, No. 14, No. 16 and No. 17) were also discussed but this document is specific to the Airfield. An initial Technical Approach (as presented) was developed using the collaborative experience of Parsons and U.S. Army Corps of Engineers (USACE) technical experts in conjunction with available site information including the 2004 Preliminary Assessment (PA), 2004 Inventory Project Report (INPR) Supplement, and other pertinent documents and interviews. The TPP Team discussed and refined the initial Technical Approach during the course of the TPP meeting yielding a Final Technical Approach for implementation at Midland Army Airfield. The TPP Team's agreed upon Final Technical Approach is documented herein and will be further detailed in the forthcoming Draft Site-Specific Work Plan (SS-WP). The Draft SS-WP will be submitted to the TPP Team members for review to ensure the key aspects of the TPP meeting resolutions are fully captured. The details of the TPP meeting are included in this TPP Memorandum document to include sample location maps, revised TPP worksheets, and revised Conceptual Site Model (CSM).

Midland Army Airfield is located approximately 8 miles southwest of Midland within Midland County, Texas. Approximately 240 acres originally known as Sloan Field were acquired by the U.S. Government in 1927 for use as a landing field. In 1930, the military began making improvements to Sloan Field and assigning personnel to the facility.

In 1935, Sloan Field was sold to the City of Midland, which operated with the name Midland Municipal Airport. The City of Midland leased an additional 860 acres of land for airfield purposes in 1940. Subsequently, the military designated the airfield as an important site under the National Defense Program. Midland Army Airfield was established in 1941 and totaled 1,680.7 acres. In 1942, the Army Air Corps expanded the mission of Midland Army Airfield to include bombardier training activities at 23 local bombing ranges in the area.

In 1949, Midland AAF was transferred back to the City of Midland, which continues to operate the facility as a municipal airport.

Midland AAF included an ordnance storage facility for small arms ammunition, pyrotechnics, black powder, high explosives, and other chemical warfare materials. A skeet range was also constructed on the base. Midland Army Airfield contains three munitions response sites (MRSs) as defined by the INPR Supplement, including a skeet range and two burial pits.

- Skeet Range (30 acres) – A skeet range was used for shotgun/skeet practice. The skeet range was located in open country on the west side of the site, adjacent to the cantonment area.
- Burial Pit No. 1 (1 acre) – Where M38A2 practice bomb remnants and parts may have been buried prior to property turnover.
- Burial Pit No. 2 (1 acre) – Where M38A2 practice bomb remnants and parts may have been buried prior to property turnover.

The SI site visit will include munitions constituents (MC) sampling and QR. The QR will implement the use of a Schonstedt magnetometer (for anomaly avoidance only), global positioning system (GPS), personal data assistant (PDA), and digital photography in an integrated format. Procedural details of the field work will be provided in a Draft SS-WP (an addendum to the Programmatic Work Plan) for stakeholder review and comment. Parsons will conduct a review of existing biologically sensitive conditions as well as culturally significant areas that may exist within the project site as part of the SS-WP preparation. There are no wetlands at Midland Army Airfield, and it is not anticipated to be an ecologically important place.

The TPP Team concurs with the Technical Approach as revised at the TPP meeting on April 18, 2007, with the following issues and resolutions, as summarized below:

- Sampling locations depicted in the Advance Packet were based on the information provided in the PA and INPR Supplement. The TPP Team agreed to the sampling locations, methodologies, and analyses presented at the meeting, with exceptions described below. This TPP Memorandum and the associated documentation reflect the decisions made by the TPP Team.
- The TPP Team agrees that the exact soil sampling locations will be left to the professional judgment of the SI Field Team. It was agreed that they can move each sample location up to 100 feet without documenting justification for the adjustment. The sampling locations depicted on the CSM will serve as the point of departure to assist the SI Field Team in assessing conditions indicative of MC contamination associated with the ranges/areas (i.e., visible MEC, impact craters, presence of a target) and will represent the fallback sample location in the absence of any significant field observations.



- At the request of TCEQ, an additional two discretionary soil samples will be available to the SI Field Team to use to sample at additional locations where conditions indicative of possible MC contamination are present.
- Comparison criteria for the sampling results will be the most conservative Texas Risk Reduction Program (TRRP) Tier 1 Residential Soil Protective Concentration Levels (lowest of the soil-to-groundwater and total soil combined for a thirty acre site). In the absence of a TRRP PCL, USEPA Region 6 Residential Medium-Specific Screening Levels (MSSLs) will be used. Regional TRRP background levels will also be used for metals comparison. Where the practical quantitation limit (PQL) is higher than the PCL, the PQL will be used instead of the TRRP PCL, as allowed by the TRRP rule. Although the site is used for industrial purposes (airport), residential standards will be used as screening criteria in accordance with TRRP guidelines.
- Due to the age of the onsite groundwater well and the high probability of lead in the piping, lead in groundwater will only be analyzed for if the well report shows a perched aquifer near ground surface.
- Method 8330, which has been approved by USEPA for explosives analysis, will be used. The Cold Regions Research and Engineering Laboratory (CRREL) sampling approach will be used for collection of the samples. The new 8330B method will not be used due to schedule and budget constraints, as well as laboratory inability to perform the new method at this time. Parsons has received training for the new method and at some point in the future the new method will be implemented.
- It is unlikely that Midland Army Airfield will be considered an important ecological site because it is a municipal airport and contains no wetlands. No ecological screening level risk assessment is anticipated to be necessary.
- If MEC is encountered during the SI field activities, the landowner will be notified and advised to call the local sheriff's office. The landowner will also be told that if they do not notify the local sheriff within one hour, the SI field team will.
- CESWF will request Rights-of-Entry (ROE) from the landowners affected by the SI field work.
- An air show is conducted annually at the airport in late September. TCEQ recommends that SI field work not be conducted at that time or in the month preceding the air show.
- The TPP Team did not identify any site specific issues requiring an expedited project schedule or document reviews for this site.

- Following the TPP Meeting, Mr. Chuck Swallow, Director of Development for the City of Midland (432-685-7288), telephoned Ms. Emily Seidel and provided the following information: 1) A Phase I assessment has been conducted in the Skeet Range; a copy is available from Mr. Swallow; 2) there are current plans for development in the Skeet Range; and 3) Mr. Swallow confirmed that a piece of ordnance was found when the new parking garage went up in 2001. For more specifics he recommended contacting Kyle Womack who oversees Parkhill Smith and Cooper (he was the PM for the Airport Construction).
- All QR and MC results will be fully documented in an SI Report for the Project Team and other stakeholder review. The SI Technical Approach described above will not be modified without consultation and agreement by the Project Team whose names appear below.

**Ms. Emily Seidel**  
**USACE, Fort Worth District**  
**Project Manager**

**Mr. Dwayne Ford**  
**USACE, Fort Worth District**  
**District Program Manager**

**Mr. Brian Jordan**  
**U.S. Army Range Support Center**  
**Design Integrator**

**Ms. Kate McCarthy, P.G.**  
**Texas Commission on Environmental Quality**  
**(TCEQ)**  
**Project Manager**

**Mr. Ralph Johnson**  
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**Project Manager**

**Mr. Wm. M. Edmiston, P.E.**  
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**Mr. Gary Miller**  
**EPA Region 6**  
**Project Manager**

**Mr. Don Silkebakken, P.E.**  
**Parsons**  
**Project Manager / Program Manager**

**Ms. Julie Burdey, P.G.**  
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**Texas SI Team Leader**

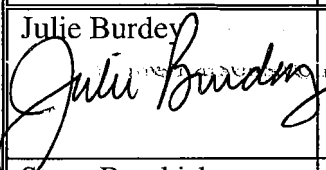

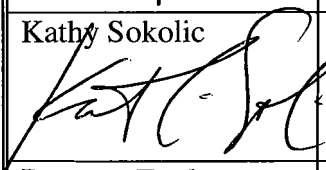



**Mr. Steve Rembish, PhD**  
**Parsons**  
**Project Manager**

# TECHNICAL PROJECT PLANNING ATTENDANCE SIGN-IN SHEET

**Project:** Midland Army Air Field and Target Ranges No. 13, 14, 16, and 17

**Date/Time:** April 18, 2007, 9:00AM

**Place:** TCEQ – Midland Branch, Midland, Texas

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# **TECHNICAL PROJECT PLANNING ATTENDANCE SIGN-IN SHEET**

**Project:** Midland Army Air Field and Target Ranges No. 13, 14, 16, and 17

**Date/Time:** April 18, 2007, 9:00AM

**Place:** TCEQ – Midland Branch, Midland, Texas

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MMRP SI Project**

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**Key Contacts (continued)**  
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**Midland County, Texas**  
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## GENERAL OVERALL SI TECHNICAL APPROACH – SOUTHWEST

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*The text presented below was excerpted from Parsons' proposal to conduct Site Inspections submitted to USAESCH in April 2005 and provides a general understanding of our planned Technical Approach to Site Inspection. Procedural details are presented in the Programmatic Work Plan and augmented by the Site Specific Work Plan (to be prepared following completion of the Technical Project Planning process for each individual site).*

### UNDERSTANDING OF THE REQUIREMENTS

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The primary objective and purpose for this Site Inspection (SI) project is to ensure existing sites within the Formerly Used Defense Site (FUDS) inventory are sufficiently evaluated to comply with Engineer Regulation (ER) 200-3-1 SI requirements and to collect sufficient data to determine whether individual project sites warrant further response action or can proceed to a no Department of Defense (DOD) action indicated (NDAI) status. The requirements of this project will be met when the following objectives have been satisfied:

- The Technical Project Planning (TPP) process has been initiated for each individual site to include determination of the necessary data to develop Data Quality Objectives (DQOs), develop the initial Conceptual Site Model (CSM), execute the field work, and satisfy SI close-out requirements.
- A Site Visit (Field Reconnaissance and Munitions Constituent Sampling) is conducted to augment the data collected during the Preliminary Assessment (PA) and to gather additional historical and site-specific data to confirm data needs and the nature and scope of the SI, as required by ER 200-3-1 paragraph 4-4.1.2.1.
- Sufficient data has been collected or developed for Hazard Ranking System (HRS) scoring by the Environmental Protection Agency (EPA).
- Sufficient data has been collected to complete the Munitions Response Site Prioritization Protocol (MRSP).

### OVERALL TECHNICAL APPROACH

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Upon comprehensive review of the existing data provided by the United States Army Corps of Engineers (USACE) and other supplemental sources, all sites can be grouped into one of three general categories. The significance of this determination aided development of the appropriate reconnaissance level and Munitions Constituent (MC) sampling strategy to meet the objectives of the SI. The three categories are:

- Category 1 Sites – Anticipated No Department of Defense Action Indicated (NDAI)
- Category 2 Sites – Anticipated Remedial Investigations and Feasibility Studies (RI/FS)
- Category 3 Sites – Sites for which a preliminary determination of the next course of action (NDAI or RI/FS) is not readily apparent.



Typically the characteristics displayed by **Category 1 – Anticipated NDAI** sites include one or more of the following qualities:

- Limited military use;
- Unsubstantiated munitions and explosives of concern (MEC) or unexploded ordnance (UXO) presence;
- Minimal or nonexistent component of risk to public health or the environment; or
- Lack of or suspect evidence to support historical training activities would leave a residual risk.

Obviously, the presence of confirmed UXO would preclude the site from further consideration for grouping in this category. However, the presence of confirmed “practice” munitions requires additional evaluation as to whether their presence is strictly confined to wholly inert items (without spotting charge or active fuzing).

The SI field approach has been formulated, to the extent possible, to reflect the anticipated outcome. The SI guidance states the minimum amount of information necessary should be collected as part of the SI to meet the project objectives. Further, *“The SI is not intended as a full-scale study of the nature and extent of contamination or explosives hazards”* per ER 200-3-1. That being said this project requires extensive coordination with regulators and other key stakeholders as part of the TPP process. The justification for an SI-level NDAI recommendation (followed by MEC/MC site closeout) is viable for some sites but requires sufficient sampling and groundtruthing to satisfy the Project Team’s concerns. As such, a successful SI field approach for Category 1 sites must recognize this paradigm and be focused to yield a sufficiently compelling argument for an NDAI determination. To accomplish this objective the site field investigations for Category 1 sites are tailored to include expanded reconnaissance coverage as well as a defensible MC sampling strategy.

Parsons reviewed U.S. Environmental Protection Agency’s (EPA’s) “Guidance on Choosing a Sampling Design...” (EPA/240/R-02/005) and other pertinent sampling guidance documents in an effort to identify a MC sampling strategy to adequately address the data needs for Category 1 sites. The basis for the strategy included the expectation that non-detect (or background) will be the ‘typical’ analytical result, that the variability will be low, and that a false-negative result is of greater concern in than a false-positive. Parsons concluded that, in general, 15 soil samples distributed throughout the site to achieve representative coverage would be sufficient for most sites. The assumptions inherent in developing this proposed sampling plan will be discussed and perhaps modified during the TPP process.

The second site type, **Category 2 – Anticipated RI/FS**, typically display one or more of the following characteristics:

- Confirmed discovery or presence of UXO;
- Documented injury or fatality incident on file attributable to UXO presence;
- Archive Search Report (ASR) designated Risk Assessment Code (RAC) score of 1 or 2;
- Prior post-ASR investigations, Time Critical Removal Action (TCRA), or other response actions; or
- Overwhelming evidence of former military usage or training that might pose a significant risk to public health or the environment.

Parsons anticipates that **screening** for MC presence (as opposed to delineation or characterization) is sufficient for Category 2 sites with bias toward high probability areas such as ranges, targets, and locations of prior MEC recoveries. As such, a representative template sampling design could not be developed for Category 2 sites and site-specific reconnaissance and MC sampling has been developed on a case-by-case basis using professional judgment.

**Category 3** sites display attributes of both Category 1 and Category 2 sites. Similar to Category 2 sites, A representative template sampling design could not be developed for Category 3 sites. Furthermore, some Category 3 sites have sub-areas that require RI/FS but at the same time large land areas where no evidence of MEC or MC contamination is likely. Therefore, site-specific reconnaissance and MC sampling has been developed on a case-by-case basis using professional judgment.

## ***PROJECT ORGANIZATION***

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Several organizations are directly involved in this Military Munitions Response Program (MMRP) SI project. Exhibit 1 identifies the key project reporting structure. The Project Team consists of the USACE geographic Design Center (South Pacific Division Range Support Center), Parsons and Severn Trent Laboratories (STL), and includes six USACE Districts (comprising the Southwest geographic Design Center region). In addition, EPA, state, and local regulatory agencies, as well as other key stakeholders will comprise individual site project teams. The roles of these team members are described below.

### ***U. S. Army Corps of Engineers, Design Center***

The U.S. Army Engineering and Support Center, Huntsville (CEHNC) provides program management as well as technical expertise support to the project. The CEHNC also has the mission to standardize the MMRP SI process. For the MMRP SI Southwest geographic Design Center region, Monique Ostermann serves as the SI Program Manager for the USACE Design Center and will provide technical management and execute the project. The Design Center responsibilities include procurement of contractor services; review and coordination of project plans and documents; interaction with the news media and the public; and monitoring the project schedule for this performance-based FFP project.

### ***U.S. Army Engineer Districts***

Representatives from one of the six local USACE Districts within the South Pacific Division Range Support Center regions (depending on individual site jurisdiction) will participate on the Project Team and attend the applicable TPP meetings. Individual USACE District PMs are responsible for obtaining rights-of-entry (ROE), coordinating with regulators and other stakeholders, and working closely with the geographic Design Center assigned to execute the SI. Additional District responsibilities may include review of project plans and documents, working with the news media and the public, and coordinating with federal, state and local regulatory agencies on issues pertaining to implementation of this SI and protection of ecological and cultural resources. The specific USACE District will be identified in the Site Specific Work Plan (SS-WP).

### ***Parsons***

A Programmatic Work Plan (PWP) has been prepared which provides overall engineering support and services for implementation of the SI. Parsons is responsible for performance of the activities detailed

in the PWP. Personnel performing work in support of this study will meet the qualifications required by Contract No. W912DY-04-D-0005, Section C, para. 5.0, Personnel Qualifications.

### *Other Subcontractors*

Parsons has subcontracted laboratory services to ensure successful completion of the Delivery Order. Chemical analytical services on this project will be provided by STL – Denver, in accordance with the Programmatic Sampling and Analysis Plan (PSAP) and site-specific SAP (SS-SAP). Specifically, STL will perform chemical analysis on samples collected from each of the sites and provide results to Parsons for validation. No other subcontractors are anticipated.

### *Federal, State, and Local Agencies*

The roles of site-specific federal, state, and local agencies include active participation in the TPP process and review of project plans and documents.

## ***PROJECT PERSONNEL***

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Parsons will utilize a highly experienced project team to support the FUDS SI project. Our key project personnel have each served in their proposed capacity on many other hazardous and toxic waste (HTW) and MEC CERCLA and NCP-related projects for USAESCH at FUDS and active and inactive installations. Personnel performing work in support of this MMRP project will meet the qualifications required by Section C, para. 5.0 of the basic contract. Parsons' project team consists of dedicated personnel to effectively manage this SI project. In addition, Parsons' depth of project resources ensures a sufficient number of project personnel remain available to manage multiple, concurrent SI taskings and any unforeseen surge capacity requirements. The SI team is familiar with USACE Districts and regulatory personnel within the Southwest USACE geographic Design Center region. All of Parsons' support personnel possess MEC work experience directly applicable to this project.

### *Project Manager*

The Parsons' PM, Mr. Don Silkebakken, will be the direct point-of-contact for USAESCH and the geographic MMRP Design Center. Mr. Silkebakken is a registered Professional Engineer with 15 years of government project experience addressing HTW and MEC contamination at FUDS. Mr. Silkebakken is responsible for managing all requirements of the project, overseeing the performance of all individuals on the SI project team, coordinating contract work, and overseeing specific task identification and resolutions. He will also schedule field efforts, identify the site personnel to accomplish the specific SI tasks as defined in the PWP and subsequent SS-WP, implement project QC and safety procedures, and direct personnel to achieve successful and timely completion of the project tasks. He will promptly implement approved and authorized changes to ongoing work orders, as necessary. Mr. Silkebakken will be assisted by the following key personnel.

### *Deputy Project Managers*

To enhance communication and foster a stronger partnership between Parsons, regulators, and the MMRP USACE geographic Design Center the Parson's PM will rely on Deputy Project Managers (DPM) that will help expedite planning and project execution. Ms. Laura Kelley and Mr. Michael Short will serve in the capacity of DPM on the SI project under Mr. Don Silkebakken's direction. Both have years of government project experience and are savvy with regards to addressing HTW and MEC

contamination at FUDS. This team has a history of success working together on MEC projects, including major MEC programs for USAESCH under our DACA87-95-D0018 and DACA87-00-D0038 contracts. Ms. Kelley and Mr. Short will be responsible for the day to day implementation of the SI components and processes. Mr. Short's primary area of responsibility will be the Southwest USACE geographic Design Center region and Ms. Kelley's primary focus will be the Southeast and Pacific USACE geographic Design Center region. However, both will be familiar with and involved in all aspects of both regions.

In addition to her DPM role, Ms. Kelley has extensive experience with environmental sampling and will provide oversight and technical direction for the QC of field and laboratory data. Mr. Short's project duties will also include oversight and technical direction for the project safety program, TPP presentations, and UXO technician assignments.

### *Field Team Leader*

Dedicated Parsons' Site Visit Teams (SVTs) will conduct all field work associated with each individual site during a single mobilization effort. Each SVT will include a Field Team Leader (FTL) who will manage all field activities under the direction of the Parsons' PM and DPM. The SI project team will include several pre-trained FTLs to ensure consistency of the individual site data collection efforts.

Specific responsibilities of the FTL include scheduling daily safety meetings, scheduling and coordinating field team activities, and submitting a Daily Progress Report (Appendix F) to the Parsons' PM. The FTL will be responsible for direct oversight of all field activities during the SI. The FTL will coordinate with the Parsons' PM as necessary to take corrective actions to assure that budgets and schedules are enforced. FTL duties will also include enforcing compliance with the Programmatic Accident Prevention Plan (PAPP) and general daily field operating procedures.

The FTL reports to the Programmatic QC Manager (PQCM) on quality matters and has responsibility for overall quality of work performed on site.

### *Project Chemist*

Ms. Tammy Chang is the Project Chemist. She will assist in preparation and review of the PWP and SS-SAP, provide technical support to the field sampling teams, review analytical results, provide analytical QC, and prepare laboratory data validation reports in compliance with project requirements. As stated above, Ms. Laura Kelley will also provide Ms. Chang with oversight and technical support.

### *UXO Personnel*

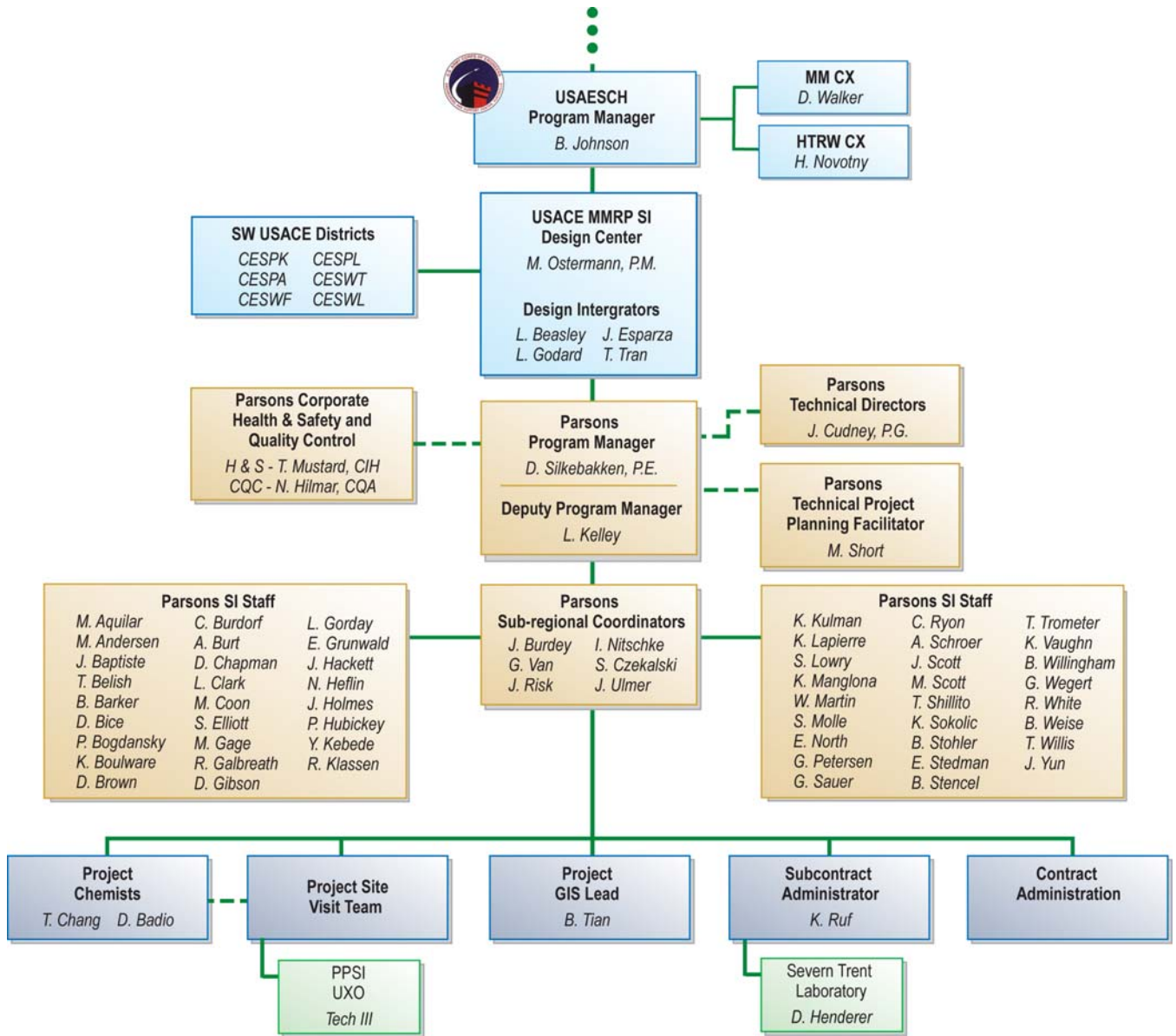
Each SVT will include a UXO Technician III (or higher). The UXO Technician will ensure safety protocols are followed, provide UXO avoidance, and MEC identification. For this project, UXO will not be handled by UXO field personnel and non-UXO qualified personnel never handle MEC under any circumstances. In the unlikely event UXO or suspect UXO is encountered, Parsons will notify the property owner, the USACE geographic Design Center (CESPA), and the local USACE District PM. In addition, Parsons will provide the appropriate emergency response contact information, upon request. SI activities in the immediate area of the finding will cease.

The UXO Technician reports to the PQCM on quality matters and is the key MEC-related QC person onsite. The UXO Technician reports to the Parson Safety and Health Manager (PSHM) for safety related issues and serves as the SVT safety officer.

Dedicated Parsons Site Visit Teams (SVTs) will conduct all field work associated with each individual site during a single mobilization effort. The duration of the field portion of the SI will vary by site and will be dependent on the amount of data collection planned following the TPP process. Each SVT will, at a minimum, include one senior scientist, geologist, or task order engineer with prior SI expertise, who will serve as the team leader and be familiar with the unique characteristics of the site pursuant to our individual site evaluations. A UXO Technician III (or higher) will accompany each SVT and will ensure safety protocols are followed, provide UXO avoidance, and MEC identification. SVT's may be augmented from a pool of prequalified additional personnel, as warranted, to support coincident reconnaissance and environmental sampling efforts. In accordance with the March 2005 Munitions Constituent (MC) Sampling Technical Update, all personnel performing environmental sampling will be trained in appropriate sampling procedures and associated documentation requirements under the supervision of a qualified chemist. Similarly, personnel performing reconnaissance (described in detail below) will have either significant prior field experience or will receive training prior to mobilization to the site.



## Exhibit 1 – Organization Chart



## WORK PLANS

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Parsons has prepared a Draft and Final Programmatic SI Work Plan (PWP) for this project in accordance with the applicable sections of Data Item Description (DID) MR-001. *After review and revision the Final PWP was approved in October 2005.*

The PWP describes the goals, methods, procedures, and personnel used for all of the field activities for the entire project and includes those components and sub-plans applicable to the project work. The overall geographic information system (GIS), site visit, and reconnaissance methodology is described in detail. In addition, the MC sampling approach is outlined. Since the site locations and conditions are highly variable, Parsons included to the extent practicable a wide array of safety factors.

For each site a draft and final SS-WP to the PWP will be prepared stipulating key site-specific information. The SS-WP will reference the Final PWP to the extent practical and focus on describing the relevant project components and logistical details pertaining to the specific site. Potentially dangerous local flora and fauna will be addressed in the SS-WPs and associated site-specific Safety Plan. Further, only cursory evaluation of endangered species information will be required because of the generally non-intrusive nature of field activities. For sites partially or wholly within wildlife management areas or similar protected areas the local governing agency will be consulted to ensure the most current information of protected species, sensitive environments, and culturally significant areas is captured and avoided during SI field activities.

The PSAP presents the details for environmental sampling that will be conducted during the project. As part of the SS-WP, a site-specific SAP annex (SS-SAP) will be prepared outlining the sampling strategy for each individual site.

## ESTABLISHMENT AND MAINTENANCE OF GIS

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A GIS database will be developed and managed for this project in accordance with DID MR 005-07 that will include spatial data from all of the different sites. Where available, spatial data from ASRs, Topographic Engineering Center (TEC) analyses, or previous MEC or HTW investigations will be used to form the baseline GIS data layers. At a minimum, the scanned USGS topographic sheets (Digital Raster Graphics also known as DRGs) and Digital Orthophoto Quandrags (DOQs) will be acquired.

Data for each project will be stored in the appropriate UTM coordinate system, using NAD 1983 datum. Mapping and data manipulation will be performed using ESRI ArcGIS software. Final output will be in ESRI Shapefile (ArcView) format. Maps will be generated in the standard USAESCH GIS format. Final maps for all sites will have a consistent format that will facilitate use in reports.

## TECHNICAL PROJECT PLANNING

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For each individual FUDS MMRP site, the TPP process will be initiated to determine the data needs to reach project closeout, develop DQOs, and develop the initial CSM. The TPP process will be conducted regardless of whether the completed PA efforts in support of the INPR or ASR (or any other prior site investigations) indicate confirmed or potential presence of MEC, as required by ER 200-3-1 paragraph 4-4.1.2.1. However, the extent of TPP activities may vary by site, as appropriate, to reflect the available body of data and presumptive remedies. For example, sites for which UXO presence has been either confirmed or overwhelming evidence supports UXO presence, the TPP will be tailored to focus toward anticipated RI/FS follow-on activities and approaches. As such, the SI field data collection for sites

falling into this category (Category 2) will be oriented primarily toward *qualitative* definition of MEC contamination extent and concentration. In addition, screening will be conducted for MC presence in environmental media. However, “characterization” of contamination (both MEC and MC) is not the objective of SI. In contrast to Category 2 sites, TPP objectives for Category 1 sites (anticipated NDAI based on desktop review of existing data) will gravitate toward a vision of closeout. As such, the SI field data collection for sites falling into this category will be oriented primarily toward production of sufficient and compelling evidence to satisfy regulator and other stakeholder concerns. In all cases, the TPP efforts will comply with EM 200-1-2 and EM 1110-1-1200 to ensure that the project establishes DQOs that are agreed to by all stakeholders prior to commencement of SI field activities.

The TPP process will be implemented at each site in coordination with the USACE Design Center and USACE District. Parsons’ regional PM and one other key project individual (SI Program Manager, Technical Lead, etc.) will attend two TPP meetings per site. The duration of each meeting will vary depending on a number of factors including, but not limited to, location, site complexity, community and regulatory interest, and confirmed MEC presence. In conjunction with the two (or more) site-specific TPP meetings these individuals will collect peripheral data (County property records, incident reports, interviews, etc) and thereby complement the efforts of the SVT.

At the conclusion of the TPP meetings a post TPP Memorandum document will be prepared for each site identifying the agreed project DQOs and other pertinent decisions for subsequent inclusion in the site-specific SI-WP. A Draft and Final document will be prepared with all comments addressed.

## ***CONCEPTUAL SITE MODEL***

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As part of the TPP process, CSMs have been developed (graphical, tabular, and animated) for each site in accordance with EM 1110-1-1200. The CSM will periodically be revised throughout the course of the project following TPP and the field effort. The current CSM will be included in the SI Report for use during follow-on activities, if applicable, outside the SI scope.

## ***SCHEDULES***

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The programmatic and site-specific schedules will be revised and updated as part of the TPP process and in accordance with DID MR-085. Site-specific schedules will be submitted after completion of the TPP process.

## ***SITE VISIT***

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ER 200-3-1 paragraph 4-4.1.2.1 requires a Site Visit for all MMRP SI efforts. For this project a dynamic field team will be deployed from a pool of dedicated pre-qualified and pre-trained individuals to optimize the effectiveness of the Site Visit data collection effort at each site. The primary objective of the Site Visit is to gather additional historical data and site-specific data to confirm data needs and the nature and scope of the SI. This effort will be closely coordinated with the TPP process. At a minimum, the following field components will be conducted as part of each Site Visit.

- Ground truth and confirm site boundaries, former targets, and ground scars.
- Evaluate vegetation and topographic conditions.
- Confirm soil characteristics and variability over site.
- Evaluate potential exposure pathways.



- Collect and update ASR (PA equivalent) documented archival research and incident reports.
- Conduct geophysical (hand-held instrument) reconnaissance of all or select portions of the site for avoidance;
  - To identify MD or MEC on the surface but below the leaf litter.
  - To assist with selection of MC sampling locations.
- Update property ownership.
- Review onsite and regional growth and development.
- Conduct supplemental interviews.
- Establish key points of contact.
- Photograph the site and significant features.
- Conduct limited MC sampling.
- Determine drinking water sources.
- Collect all data necessary for EPA to conduct Hazard Ranking System (HRS) scoring.
- Collect all data necessary to complete the Munitions Response Site Prioritization Protocol (MRSP).

The duration of each Site Visit will vary depending on a number of factors including, but not limited to, location, site size and complexity, level of reconnaissance, MC sampling approach, and extent of existing historical data.

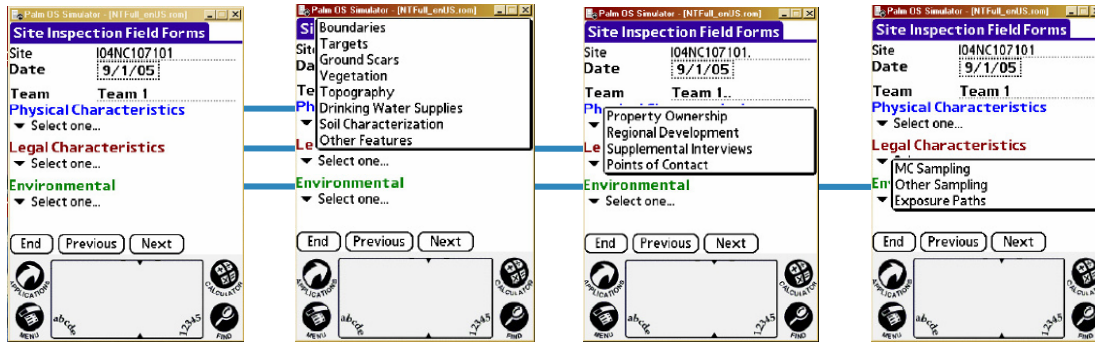
## ***FIELD RECONNAISSANCE***

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In conjunction with the Site Visits, Qualitative Reconnaissance (QR) of “selected” areas within each site will be conducted, as warranted (and agreed upon during TPP). The primary objective of the QR is to reaffirm MEC presence, if previously documented, or to further support the absence of MEC within the entire site or specific sub-sites. In addition, the QR will:

- Aid in screening of rough lateral extent of MEC contamination areas (if present) based on visual observations;
- Confirm site boundaries, former targets, and ground scars; and
- Provide photographic documentation of vegetation, topographic conditions and other significant features.

The duration of the QR will vary by site depending on a number of factors including, but not limited to, location, site size and complexity, vegetation, and professional judgment of the necessary level of reconnaissance. Additional site-specific QR (SS-QR) data collection and justifications are presented below for each site based on Parsons desktop review of existing site data.



The same dedicated multi-purpose SVT will be used for all components of the field effort including the QR. The QR efforts will be refined and further developed during the TPP. In order to streamline data collection, ensure consistency, quality, and subsequent GIS manipulation, we will utilize a digital system to integrate textual, photographic, and GPS position data into a single Microsoft Access database. With few exceptions, a Palm Operating System based personal digital assistant (PDA) with a built-in megapixel camera and Bluetooth wireless connectivity and common PDA functionality will be used. The GPS will employ Bluetooth wireless link to transmit position information to nearby computers or PDAs. It has an internal point logging capability, so tracks can be kept and downloaded for later reference. It can also log raw data, which can be used to post process positions to sub-meter accuracy if necessary. The unit itself is a 12 channel parallel receiver with Wide Area Augmentation System (WAAS) capability. Rated accuracy with WAAS enabled is <3 meters.

For sites where the forest canopy or other cultural interference precludes use of all or part of the digital system hardcopy data collection will be available as a backup.

Parsons has already developed the electronic forms and pick lists to be utilized by the SVT, which ensures uniformity and completeness. In the event, UXO is discovered during the site reconnaissance effort, the item will be clearly marked and the property owner contacted. The SVT will not handle or be responsible for disposal or destruction of any MEC encountered.

## ***MUNITIONS CONSTITUENTS SAMPLING AND ANALYSIS***

In conjunction with the Site Visits, MC Sampling will be conducted within “selected” areas of each site, as warranted (and agreed upon during the TPP). The primary objective of the sampling effort will be to identify and screen the site for MC contamination. The sampling strategy will include collection of samples in areas with confirmed MEC presence and therefore the highest likelihood of having MC presence. In addition, samples will also be collected from low probability areas. For sites where RI/FS will follow the SI (Category 2), these samples will serve as background samples (when MC is not detected). For sites where NDAI is plausible (Category 1), high probability sample locations are

generally not present. Thus, the number of site samples will be expanded and distributed throughout the site in an effort to present a compelling argument for NDAI to decision makers/regulators.

The location of each sample will be recorded with a GPS point taken for inclusion in the GIS database. In addition, tapes will be used to measure distances from significant nearby features.

The installation of groundwater monitoring wells during the SI phase is not standard industry practice and is not anticipated during the course of this project. ER 200-3-1 and other regulations and guidance documents support this assertion. As an alternative, existing residential drinking water wells (when derived from groundwater sources) may be sampled for some sites. In addition, surface water, existing monitoring well, or irrigation well sources may also be appropriate. All facets of the sampling effort will be refined for each individual site as part of the TPP process.

### *Sample Collection*

Before sampling at any location, the UXO Technician III (assigned to every SVT) will use an appropriate magnetic locator to confirm the selected sample location is free of surface and subsurface ferrous debris (potential MEC). If the selected location is not quiet (based on audible signals from the instrument) then an alternate sample location will be selected near the original location. This process will be conducted iteratively until a location can be deemed safe by the UXO Technician III.

The heterogeneity of explosives in soils, particularly in impact and open burn/open detonation OB/OD areas, poses significant challenges for MC sampling efforts. Several options are available for overcoming this problem, such as collecting more samples, compositing samples, and homogenizing samples. Each of these methods may be used to improve the SI MC sampling effort, as appropriate. The sampling details will be included in the SS-WP for each site.

At each surface soil sampling location the Cold Regions Research Engineering Laboratory (CRREL) seven-wheel sampling approach will be used, as discussed in the Munitions Constituent Sampling Technical Update, March 2005. Seven discrete (grab) surface soil samples will be collected from the perimeter and center of a four foot diameter circle. A disposable spade will be used to remove the vegetation and a two-inch deep hole will be excavated at each sampling location. A new scoop will be used to scrape soil from the walls of the hole across the entire depth interval from the surface to the two-inch depth. Care will be taken to remove approximately equal amounts of soil across the full depth interval to provide a representative vertical composite. The sample will be homogenized to ensure sample consistency for analysis. The sample preparation effort for this purpose will include; removal of large stones and pieces of vegetation; kneading by hand to break up large clumps, and mixing. The composited sample will be thoroughly mixed, coned, and quartered and the appropriate volume of soil will be used for extraction of explosives compounds. Comprehensive details of this sampling technique will be provided in the PSAP and SS-SAP Annex.

Surface water samples are proposed for some sites. Surface water will be obtained as grab samples by submerging sample bottles into the water medium to fill up the sample containers. If a sediment sample is to be taken, the sampling site will be cleared by placing a magnetic locator in the water over the site to ensure there are no ferrous objects present. Sediment samples will be collected by lowering a stainless steel auger into the water body and into the bottom sediment, advancing the disposable auger bucket approximately one foot into the sediment, withdrawing the auger, and retrieving the sediment sample from the auger bucket with a disposable spoon into the appropriate sample containers. If surface water and sediment samples are co-located surface water will be collected first to reduce disturbance in the

water sample. Additional details on sampling procedures for both surface water and sediment are specified in the Munitions Constituent Sampling Technical Update, March 2005 and PSAP and will be described in the SS-SAP.

In the event, UXO is discovered during the MC sampling effort, the item will be clearly marked and the property owner contacted. The sampling team will not handle or be responsible for disposal or destruction of any MEC encountered.

### *Analytical Procedures and Data Validation*

Parsons will determine, in consultation with its subcontractor laboratory, appropriate analytical methodology to meet the DQOs developed during the TPP process. In addition, all applicable components of the PSAP (prepared by USACE) and the SS-WP will be addressed. STL's reporting limits and method detection limits will be incorporated in the PSAP, SS-SAP, and other appropriate documents. Standard laboratory operating procedures for sample preparation for the explosive analysis will be incorporated in the work plan.

Criteria listed in the DID MR-005-10 shall be followed by the laboratory and Parsons. In general, data validation for laboratory hardcopy reports will be performed by the Parsons' project chemist for all sample results in accordance with the requirements contained in the PSAP, SS-SAP, applicable USEPA Region SOPs, and the USEPA *National Functional Guidelines for Data Review* (USEPA, 1999, 2002). Data qualifiers applied during the data validation process will be added to the electronic files. Laboratory results will be assessed for compliance with required precision, accuracy, completeness, comparability, and representativeness.

### *SI SAFETY*

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For this program, Tim Mustard, a CIH with over 26 years of experience implementing health & safety (H&S) policies and procedures at HTW and munitions response sites, will be the safety officer. He brings extensive field experience and has either developed or reviewed over 20 Accident Prevention Plans in compliance with DID MR-005-05 specifications. Furthermore, Mr. Mustard reports directly to our PI&T Safety Manager, Jim Owen. This independent reporting structure ensures that any differences of opinion with the Project Manager are reconciled quickly and effectively with minimal impact to the project and no conflict of interest.

Parsons evaluates and mitigates risk by the use of a Four-Phase Risk Model, which states: identify the risk, assess the risk (probability, consequence and risk level), plan risk mitigation (avoidance, reduction, mitigation), and execute.

Each SVT will include a dedicated UXO Technician III solely responsible for site safety with stop work authority. The safety technician will conduct site-specific safety training and, when applicable, UXO recognition training for all site personnel prior to commencing site activities. At some sites unique site-specific safety factors will be considered.

### *SI QUALITY CONTROL*

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Parsons' approach to quality is to define mutually agreed upon goals and objectives for each project site, and achieve these goals and objectives through a system of audits, enforcement, and feedback. The inclusion of the TPP process will ensure that the appropriate emphasis is placed on attaining the DQOs

established early in the process. Norman Hilmar serves as the CQC Manager on this project. Norman is an ASQC Certified Quality Auditor and has 25 years of quality control experience including developing and reviewing HTW and munitions response QC Plans (QCP) to USACE MR-005-11 specifications. As in our safety program, the Quality Manager also has independent reporting to our Company QC Manager, Sabash Damle.

Parsons will develop an overriding Program QCP that defines the processes and procedures for addressing quality. This plan defines the responsibilities at the program and project levels, as well as the overall procedures and process to be implemented at the site level. Each site will have a clearly defined QCP developed as part of the work planning process that defines site-specific procedures, metrics, and goals. These procedures incorporate the requirements of DID MR-005-10, Munitions Constituents Chemical Data Quality Deliverables, and ensures independent quality control audits of the sampling laboratory are conducted on a periodic basis.

## SITE SPECIFIC SI TECHNICAL APPROACH

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### *Midland Army Airfield*

Midland Army Airfield (AAF) is located in Midland County, in the western half of Texas, and served as a base for conducting bombardier training activities at 23 local bombing ranges. This site is 8.5 miles southwest of the City of Midland, accessed from US Highway 20. Previously known as Sloan Field, the airport was used by the Army intermittently in the 1930s for re-fueling. The site was acquired and was used by the U.S. Government from 1941 until 1946 and released back to the City of Midland in 1949. The airfield portion of the site is now owned by the City of Midland and is known as Midland International Airport.

Midland AAF property comprises approximately 1,681 acres. Midland AAF included an ordnance storage facility for small arms ammunition, pyrotechnics, black powder, high explosives, and other chemical warfare materials. A gas defense instruction building was also constructed, but historical documents indicate that the only chemical training conducted onsite utilized chlorine and tear agents. A skeet range was also constructed on the base.

There are three munitions response sites (MRSs), including:

- Skeet Range – Approximately 30 acres, was used for shotgun/skeet practice. The skeet range was located in open country on the west side of the site, adjacent to the cantonment area.
- Burial Pit No. 1 – Approximately 1 acre where M38A2 practice bomb remnants and parts may have been buried prior to property turnover.
- Burial Pit No. 2 – Approximately 1 acre where M38A2 practice bomb remnants and parts may have been buried prior to property turnover.

A Certificate of Dedudiving was issued for this property on February 26, 1947. No bombs or explosive materials were found during the dedudiving. Records state that eight or nine practice bombs were recovered and disposed of during construction of new airport facilities in 1999. During the 2004 site visit for the Preliminary Assessment (PA), a large number of M38A2 practice bomb bodies were found lying on the surface near the burial pits.

USGS topographic maps indicate a well present inside the formerly used defense site (FUDS) boundary. It is located on the western property boundary near the skeet range. The well will be sampled if equipped with a functioning pump and plumbing. Groundwater in the area occurs at a depth of approximately 150 to 300 feet. The Edwards-Trinity aquifer system is the principle source of groundwater in the area and it is used for irrigation, industrial, and domestic purposes. There is no surface water present on site.

The U.S. Fish and Wildlife Service has indicated that numerous listed and candidate species may occur within Midland County, Texas. In addition, the State of Texas Parks and Wildlife has listed many special status species that occur in Midland County, Texas. However, the area is currently an airport, there is no critical habitat within the FUDS boundary, and there are no known occurrences of threatened or endangered species within the site; therefore, it is not anticipated to be an ecologically important place.



Based on our understanding of the project site, Parsons sees the existing body of information for this site as insufficient to identify an anticipated conclusion prior to field activities. The Burial Pits may contain disposed munitions materials (DMM) and potentially munitions and explosives of concern (MEC), but they were given a Risk Assessment Code (RAC) score of 5 in the Inventory Project Report (INPR) Supplement. The skeet range was also given a RAC score of 5 in the INPR Supplement. The extent and overall concentrations of the burial pits are unknown. Exposure pathways to the Burial Pits may be incomplete as a result of a lack of access restrictions. In accordance with ER 200-3-1 and the Performance Work Statement (PWS), sufficient data needs to be collected during the site investigation (SI) to evaluate the presence of MEC as well as screen for the presence of munitions constituents (MC) for effective and rapid initiation of a Remedial Investigation/Feasibility Study (RI/FS) or to confirm no significant release is posed to public health and the environment in order to achieve No Department of Defense Action Indicated (NDAI). Parsons proposes the following activities in support of the SI for Midland AAF in Midland, Texas:

- **Site Visit** – Parsons will conduct a Site Visit in accordance with the Programmatic Work Plan (PWP) and Site-Specific Work Plan (SS-WP). The Site Visit will cover the entire site with emphasis on the target area and those areas where practice bomb MD has been previously reported. The Site Visit will focus on site aspects that may affect implementation of a possible RI/FS, but also to provide sufficient data to support an NDAI recommendation. Data will be gathered to evaluate limitations of vegetation and topography as they pertain to site characterization, and to identify potential limitations to subsequent recommended actions.
- **Qualitative Reconnaissance** – Parsons will conduct Qualitative Reconnaissance (QR) in accordance with the PWP. For the Midland AAF the QR will gather information that will be useful for planning and focusing an RI/FS, if necessary, or supporting an NDAI recommendation. For the Skeet Range area, Parsons will conduct a thorough reconnaissance of the range. For the Burial Pit areas, Parsons will conduct a thorough reconnaissance of the suspected trench areas.
- **MC Sampling** – Parsons will conduct MC sampling in accordance with the PWP, the Programmatic Sampling and Analysis Plan, and the SS-WP Addendum. Surface soil samples will be collected in the Skeet Range and near the Burial Pits to evaluate the presence of MC contamination. Samples collected from the Skeet Range will be analyzed for polycyclic aromatic hydrocarbons (PAHs), antimony, copper, and lead. Samples collected from the Burial Pit MRSs will be analyzed for explosives, antimony, copper, and lead. Sampling of water from a groundwater well is planned if it is equipped with a functioning pump.

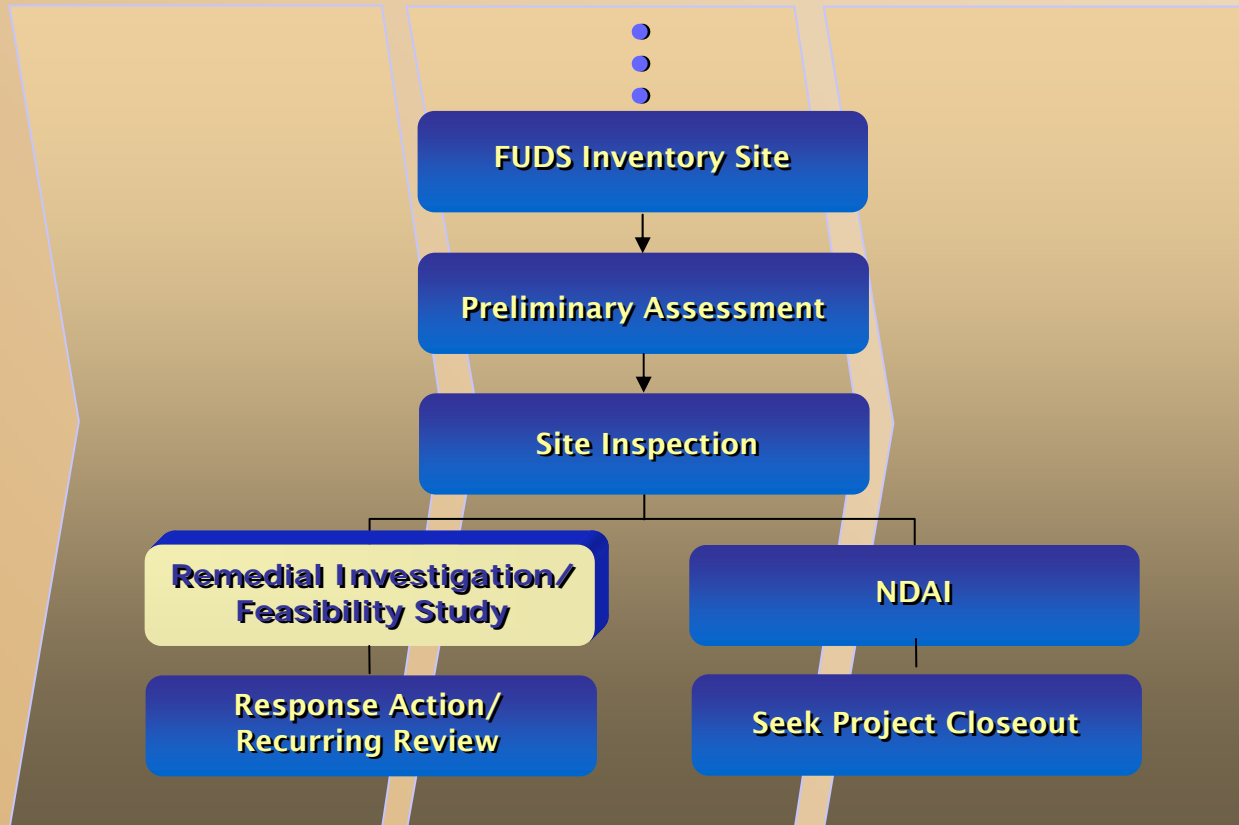
## Proposed MC Sampling Approach Midland Army Airfield, TX

Sample Type	Number of Samples/ Proposed Analyses	Justification
Surface Soil	2 – Explosives, antimony, copper, and lead 4 – PAHs, antimony, copper, lead 1 – PAHs only (background) Up to 2 discretionary samples for explosives, antimony, copper, and lead	Collected in the skeet range and two burial pits. Intent is to verify that the site poses no significant risk from MC contamination, or to provide additional information for RI/FS.
Groundwater	1 – Explosives, antimony, copper, lead, PAHs	Collected from an onsite well if it is equipped with a functioning pump. Lead will only be analyzed for if the water is perched. Sampling to evaluate available water sources to support SI recommendation.
Appropriate QC samples are not included in above sample count.		



# MMRP SI PROCESS FLOW

MIDLAND ARMY AIRFIELD  
MIDLAND COUNTY, TEXAS



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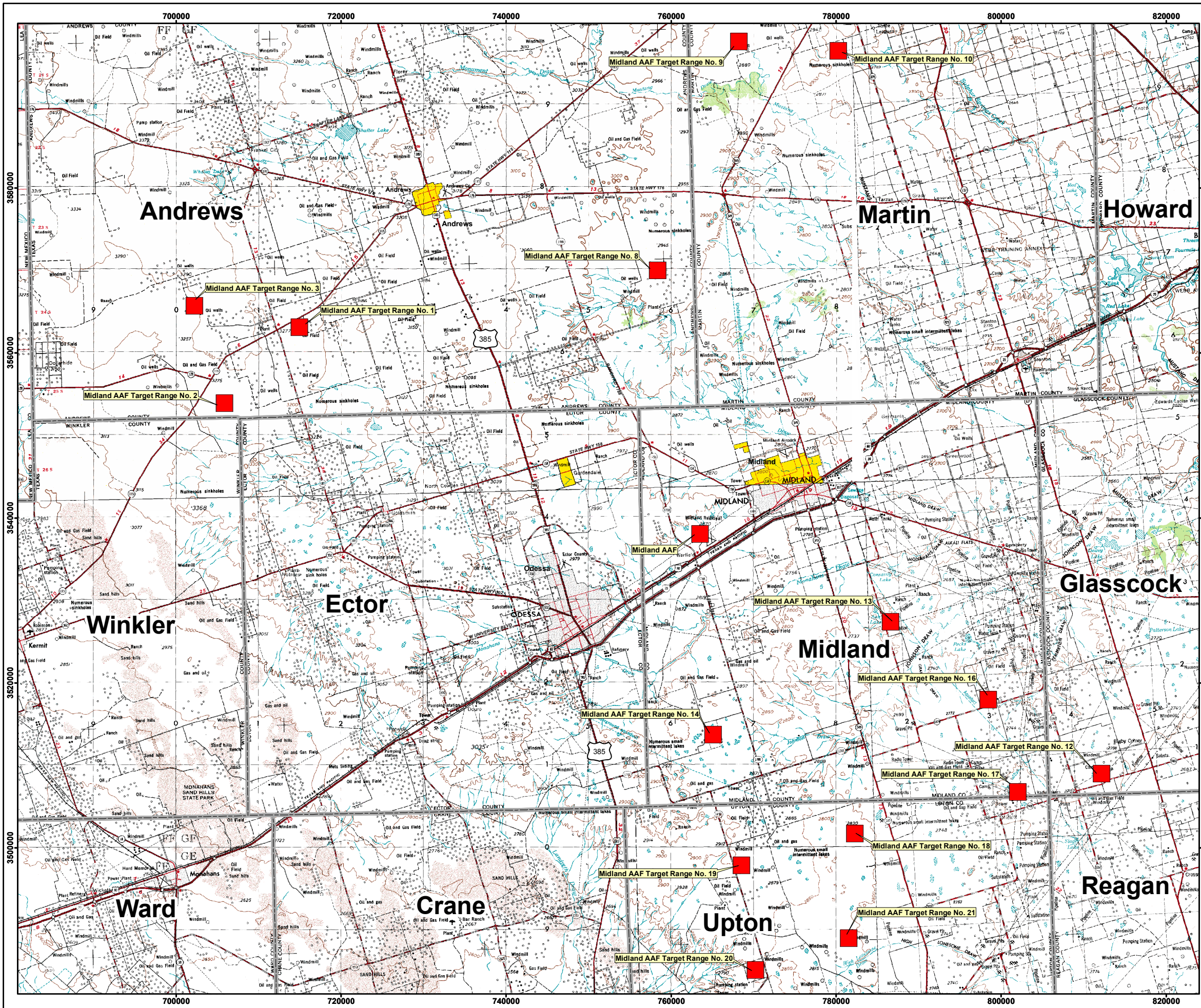


Figure 1

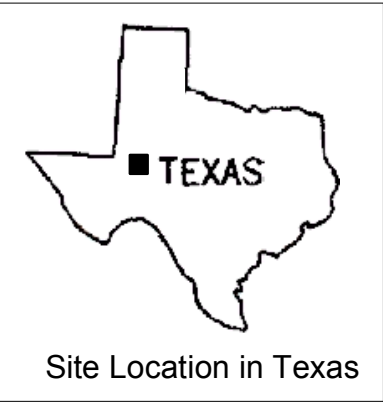
### Site Locations

## Midland AAF and Associated Sites

Andrews, Glasscock, Martin, Midland, and Upton Counties, Texas

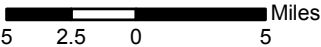
### Legend


- Approximate Site Location
- County Boundary



Site Location in Texas

Image Source: USGS Topos  
Projection: UTM Zone 13 NAD83, Map Units in Meters



PARSONS		U.S. ARMY SOUTH PACIFIC DIVISION RANGE SUPPORT CENTER	
DESIGNED BY: BT	<div>Site Locations</div> <div>SCALE: As Shown</div> <div>DATE: July 2007</div> <div>FILE: X:\GIS\Site_inspections_sw\Maps\midland_tx\Fig1.mxd</div> <div>PROJECT NUMBER: 744653.71000</div> <div>PAGENUMBER:<div></div></div>		
DRAWN BY: BT			
CHECKED BY: KV			
SUBMITTED BY: DS			



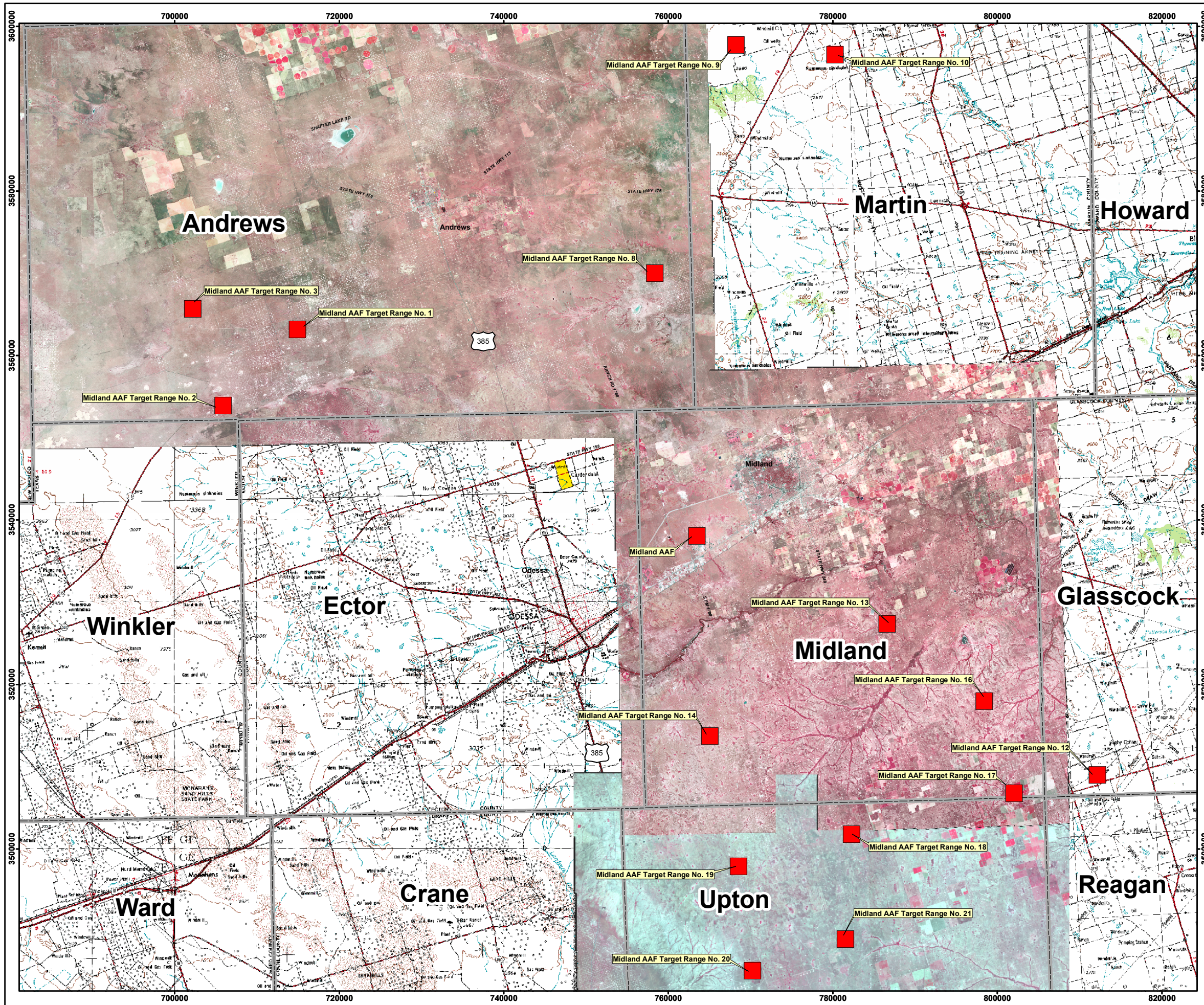


Figure 2

**Site Locations**  
**Midland AAF and Associated Sites**

Andrews, Glasscock, Martin, Midland, and  
Upton Counties, Texas

**Legend**

- Approximate Site Location
- County Boundary

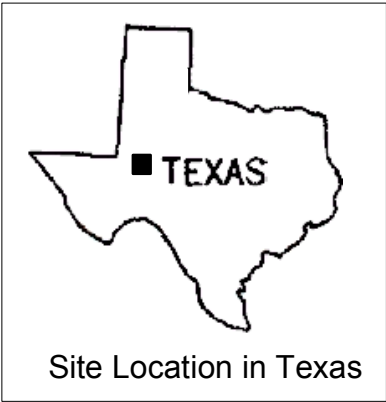



Image Source: Orthophotos, 2004  
Projection: UTM Zone 13 NAD83, Map Units in Meters

5 2.5 0 5 Miles

PARSONS		U.S. ARMY SOUTH PACIFIC DIVISION RANGE SUPPORT CENTER	
DESIGNED BY: BT	<div>Site Locations</div>		
DRAWN BY: BT			
CHECKED BY: KV			
SUBMITTED BY: DS			
SCALE: As Shown		PROJECT NUMBER: 744653.71000	
DATE: July 2007		PAGE NUMBER:	
FILE: X:\GIS\Site_inspections_sw\Maps\midland_tx\Fig2.mxd			



CONCEPTUAL SITE MODEL – MUNITIONS AND EXPLOSIVES OF CONCERN  
MIDLAND ARMY AIRFIELD  
Midland County, Texas

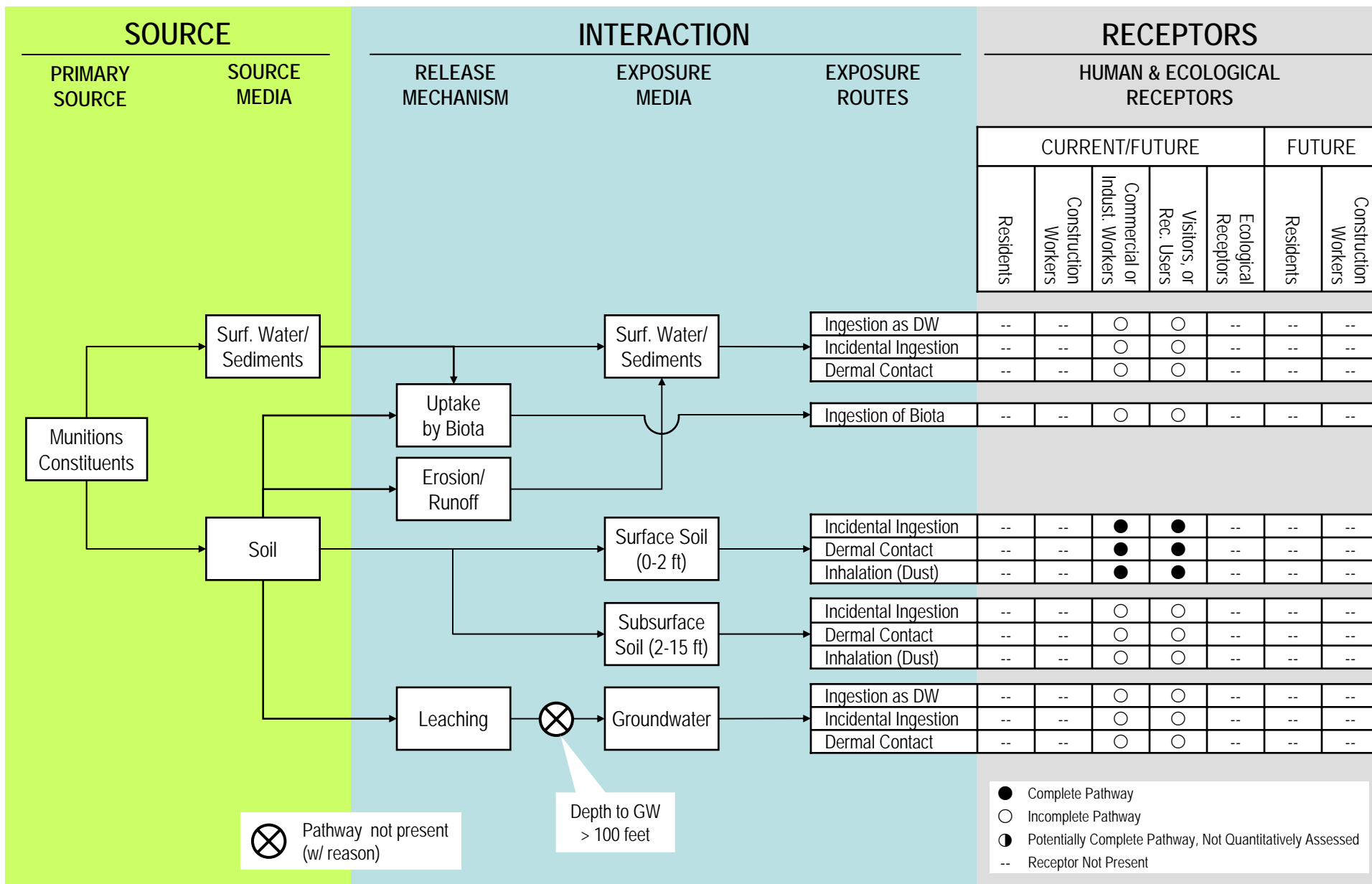
Subsite/Range	Acreage*	Suspect Past DoD Activities	Potential MEC/MD Presence	MEC/MD Found Since Closure	Previous Investigation/Clearance Actions	Post-DoD Land Use and Current Land Use	Potential Receptors	Potential Source and Receptor Interaction	Proposed Field Sampling/ Qualitative Reconnaissance
SKEET RANGE	30	Skeet range	Small Arms, General <sup>(1)</sup>	None	Certificate of Clearance - 1947 July 19, 2004 site visit in support of the PA	Airfield and Maintenance Facilities	Visitors to the airfield, airport staff	Visitors to the airfield, airport staff	Soil samples #3-6 and groundwater sample #GW1 on Figures 3A and 3B / QR.
BURIAL PIT NO. 1	0.93	Suspected disposal of unserviceable and/or unused practice bombs	M38A2, Practice bomb, 100lbs <sup>(1,2)</sup> M3 and M5 Spotting Charges <sup>(1)</sup> M1A1 Spotting Charge <sup>(1)</sup> AN-M30A1 100lb <sup>(1)</sup> M47, Incendiary Bomb, 100-lb <sup>(1)</sup>	M38 practice bomb remnants observed during 2004 PA site visit.	Certificate of Clearance - 1947 July 19, 2004 site visit in support of the PA	Airfield and Maintenance Facilities	Visitors to the airfield, airport staff	Visitors to the airfield, airport staff	Soil samples #1-2 on Figures 3A and 3B / QR.
BURIAL PIT NO. 2	0.93	Suspected disposal of unserviceable and/or unused practice bombs	M38A2, Practice bomb, 100lbs <sup>(1,2)</sup> M3 and M5 Spotting Charges <sup>(1)</sup> M1A1 Spotting Charge <sup>(1)</sup> AN-M30A1 100lb <sup>(1)</sup> M47, Incendiary Bomb, 100-lb <sup>(1)</sup>	M38 practice bomb remnants observed during 2004 PA site visit.	Certificate of Clearance - 1947 July 19, 2004 site visit in support of the PA	Airfield and Maintenance Facilities	Visitors to the airfield, airport staff	Visitors to the airfield, airport staff	Soil samples #1-2 on Figures 3A and 3B / QR.
REMAINING LAND	1,649.14	None	None	8-9 practice bombs recovered during 1999 construction of the new terminal facilities.	Certificate of Clearance - 1947 July 19, 2004 site visit in support of the PA	Airfield and Maintenance Facilities	Visitors to the airfield, airport staff	Visitors to the airfield, airport staff	Soil sample #7 on Figures 3A and 3B
TOTAL	1,681								
				Source 1 = PA (2004) 2 = INPR Supplement (2004)	ASR = Archives Search Report DoD = Department of Defense INPR = Inventory Project Report MD = Munitions debris MEC = Munitions and explosives of concern PA = Preliminary Assessment QR = Qualitative Reconnaissance				

\* - Total acreage accounts for overlap of subsites and is limited to project boundaries.

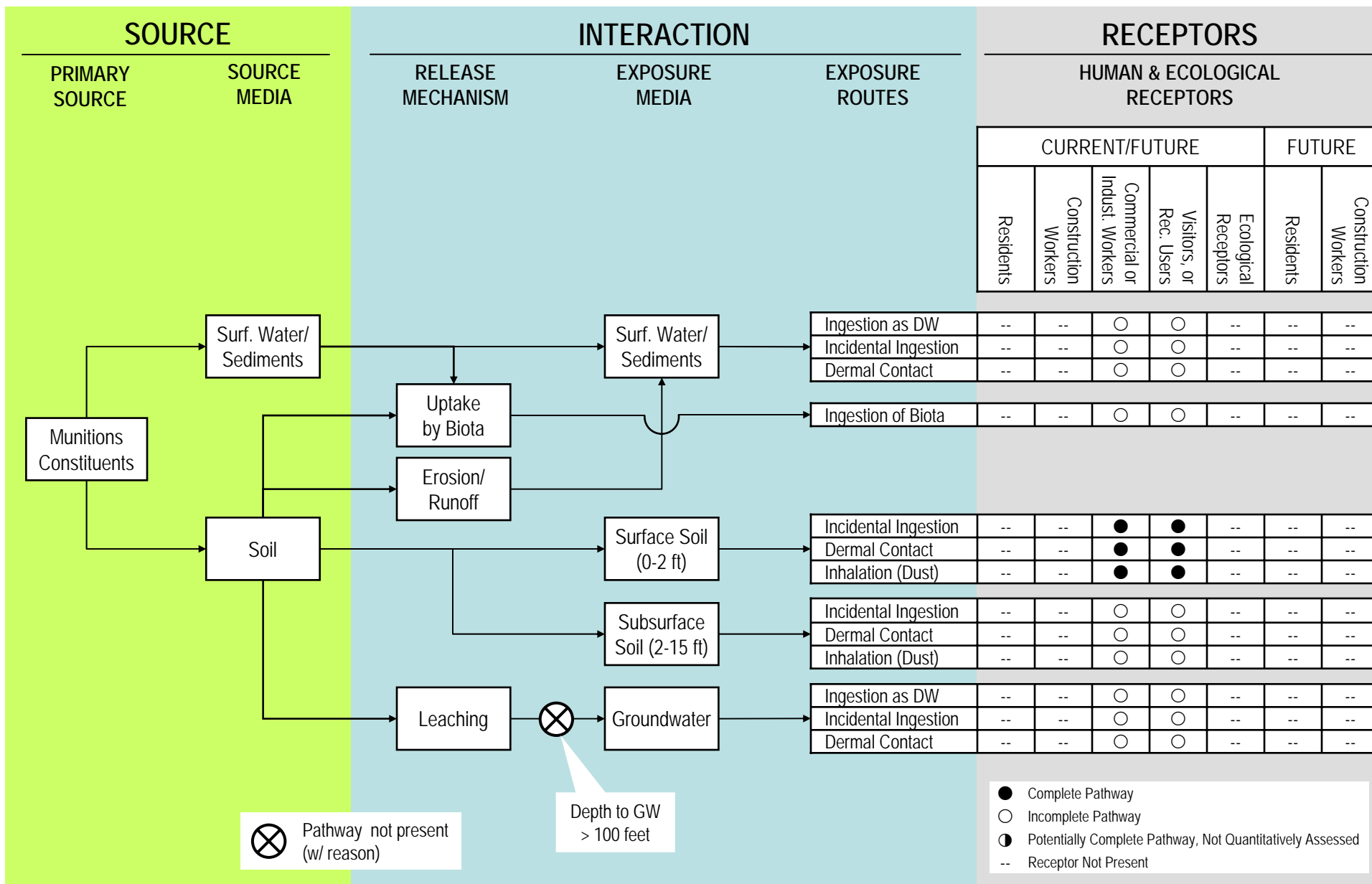
**MRS Name:** Midland AAF – Burial Pit No. 1

**Completed By:** Liz Murrell, PARSONS

**Date Completed:** July 11, 2007



**Date Completed:** July 11, 2007

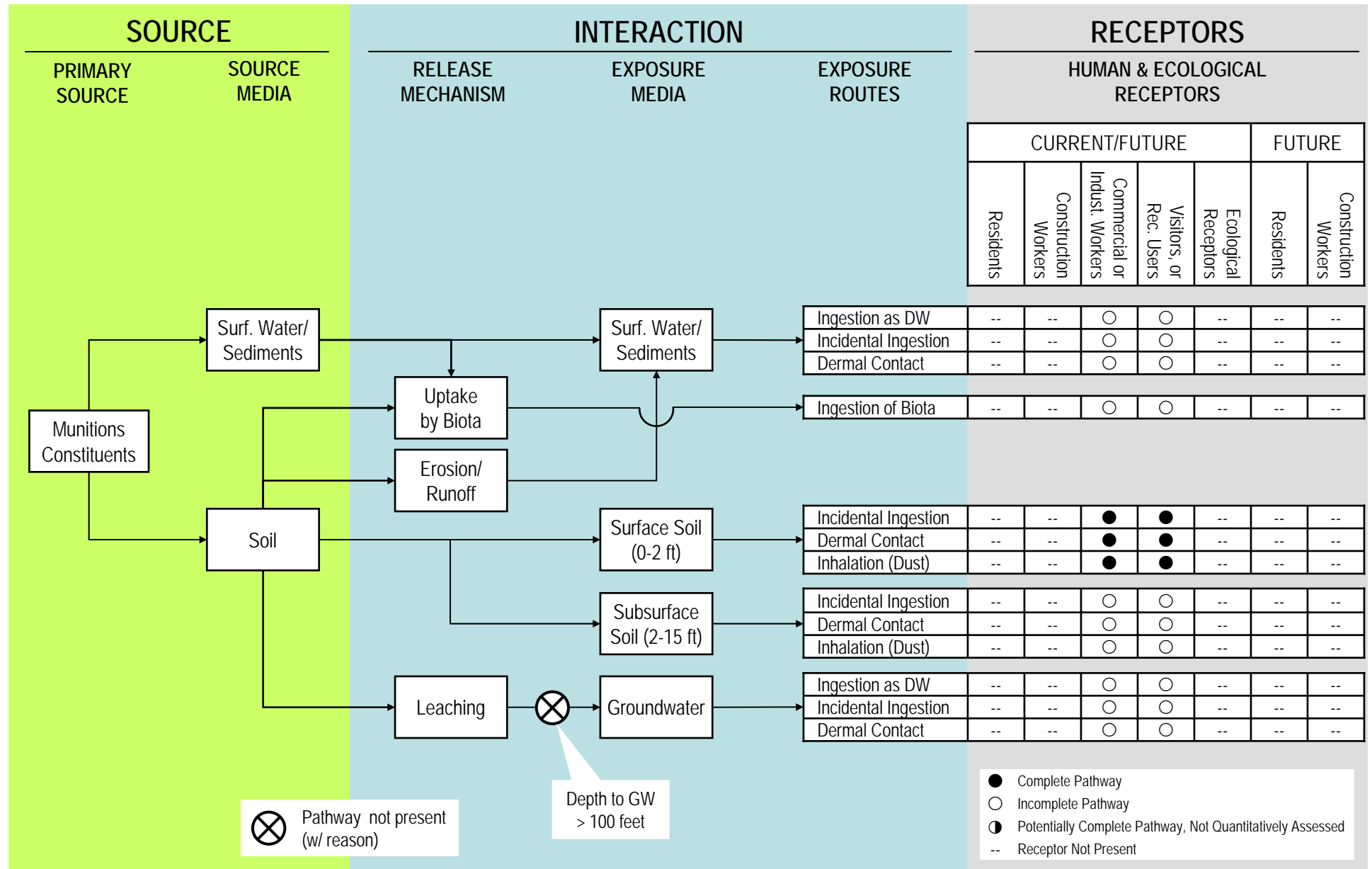


# CONCEPTUAL SITE EXPOSURE MODEL

**MRS Name:** Midland AAF – Skeet Range

**Completed By:** Liz Murrell, PARSONS

**Date Completed:** July 11, 2007





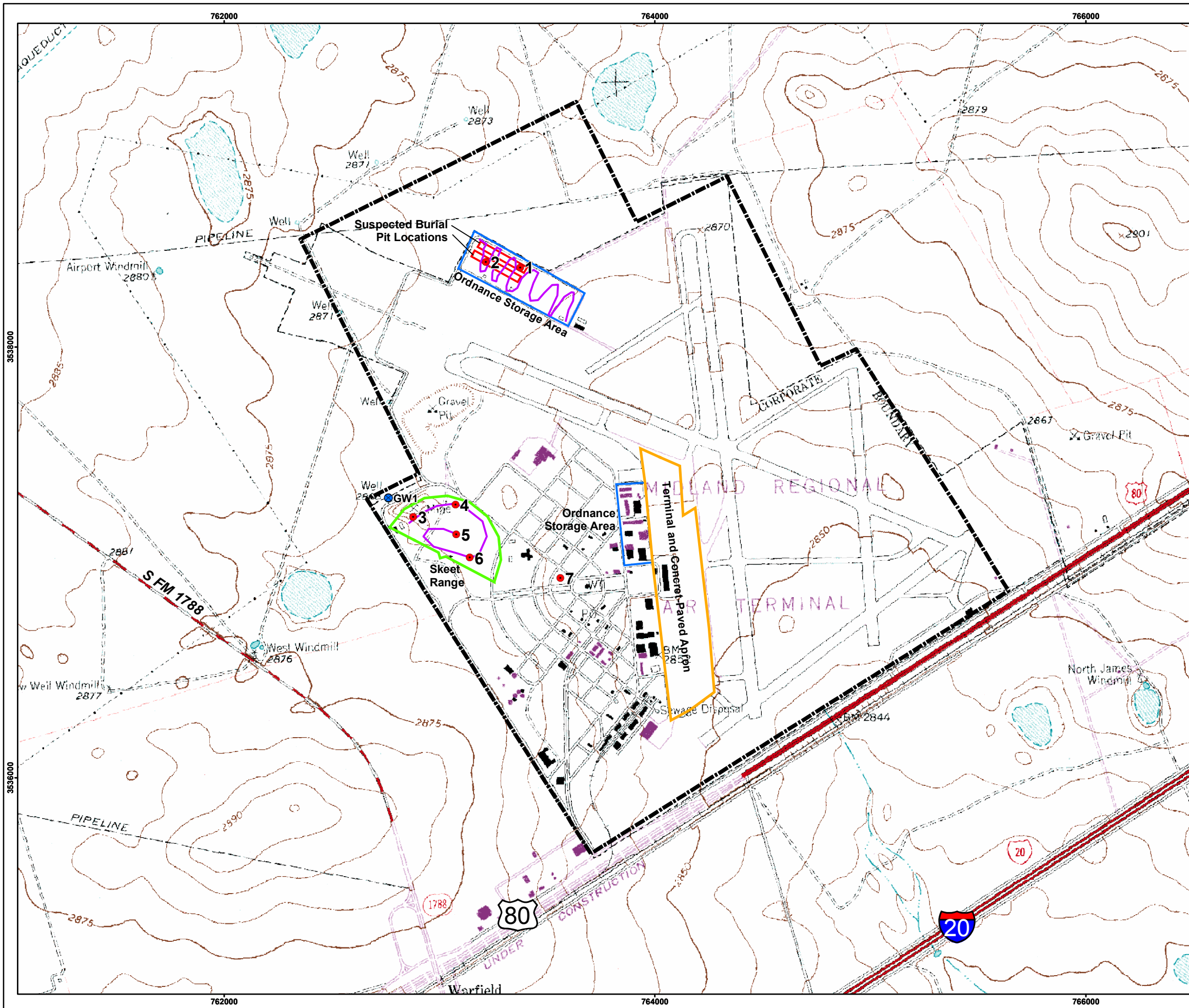


Figure 3A

# Qualitative Reconnaissance and Sample Locations Map Midland Army Airfield

FUDS Project No. K06TX019901  
Midland County, Texas

## Legend

- Soil Sample Location
- Groundwater Sample Location
- Small Arms Range Boundary
- Installation Boundary
- Suspected Burial Pit
- Ordnance Storage Area
- Terminal and Concrete-Paved Apron
- Representative Qualitative Reconnaissance Track

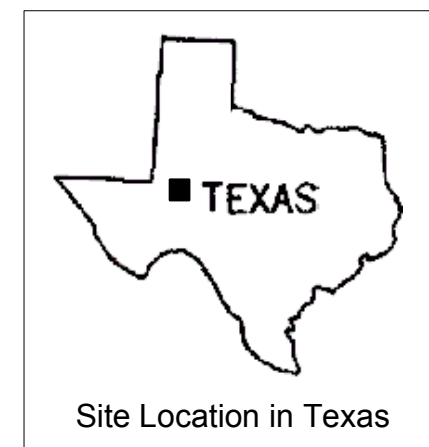


Image Source: USGS 7.5' Topo Quadrangles, 1971  
Projection: UTM Zone 13 NAD83, Map Units in Meters

1,500 750 0 1,500 Feet

PARSONS

U.S. ARMY SOUTH  
PACIFIC DIVISION  
RANGE SUPPORT CENTER

DESIGNED BY:  
BT

DRAWN BY:  
BT

CHECKED BY:  
KV

SUBMITTED BY:  
DS

## Qualitative Reconnaissance and Sample Locations Map

SCALE: As Shown

DATE: July 2007

FILE: X:\GIS\Site\_Inspections\_sw\Maps\midland\_tx\Fig3A\_aaf.mxd

PROJECT NUMBER:  
744653.71000

PAGE NUMBER:





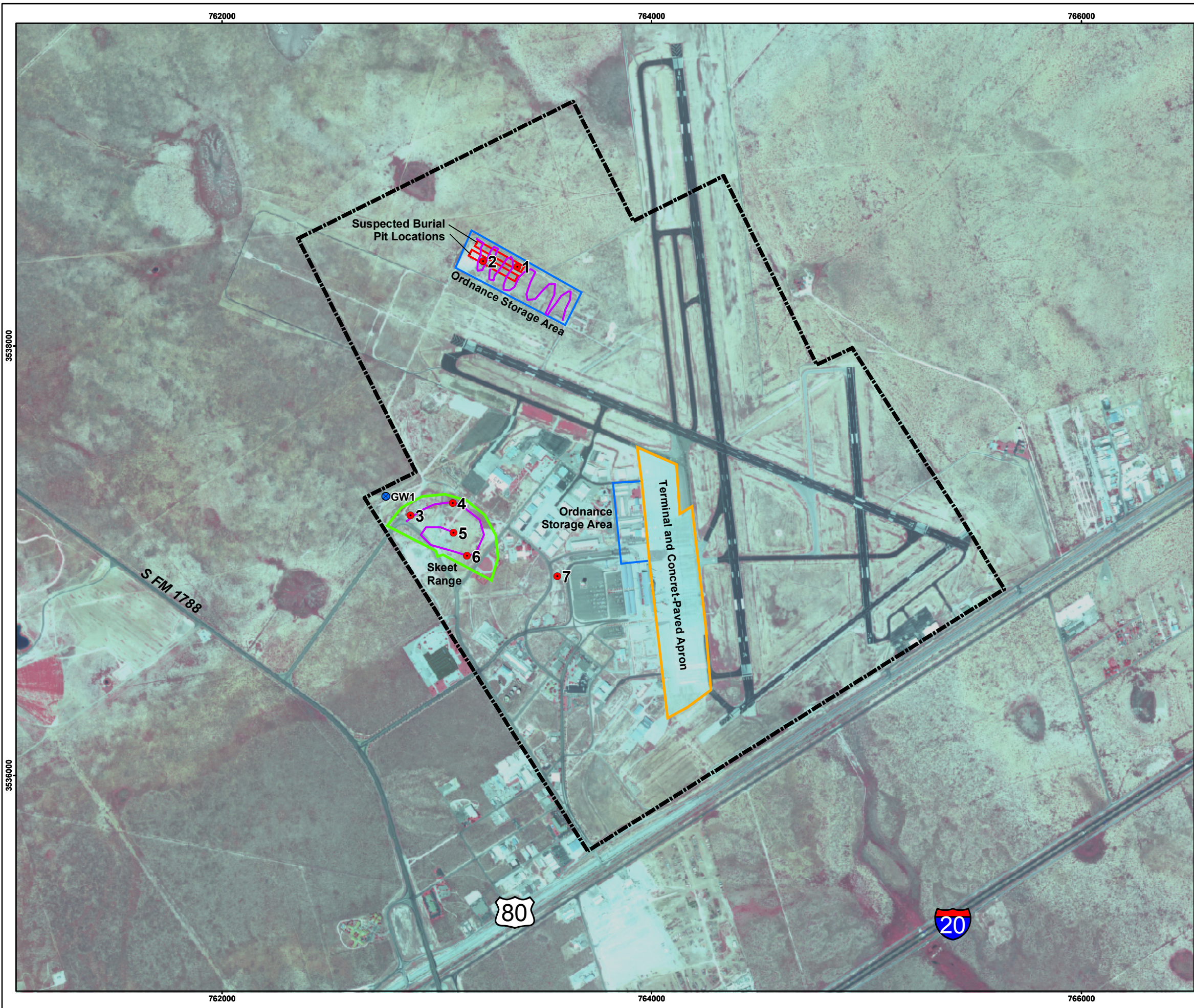


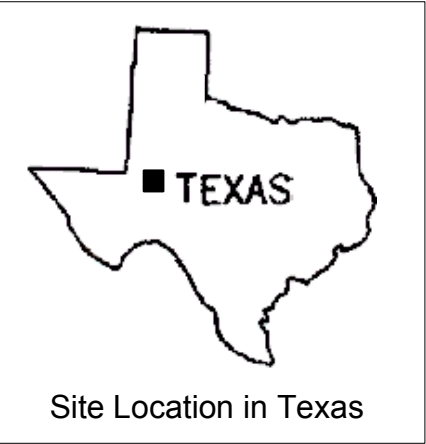
Figure 3B

**Qualitative Reconnaissance and  
Sample Locations Map  
Midland Army Airfield**

FUDS Project No. K06TX019901  
Midland County, Texas

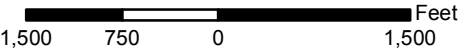
**Legend**


- Soil Sample Location
- ⊗ Groundwater Sample Location
- Small Arms Range Boundary
- - - Installation Boundary
- Suspected Burial Pit
- Ordnance Storage Area
- Terminal and Concrete-Paved Apron
- Representative Qualitative Reconnaissance Track



Site Location in Texas

Image Source: Orthophotos, 2004  
Projection: UTM Zone 13 NAD83, Map Units in Meters



PARSONS		U.S. ARMY SOUTH PACIFIC DIVISION RANGE SUPPORT CENTER	
DESIGNED BY: BT	<b>Qualitative Reconnaissance and Sample Locations Map</b>		
DRAWN BY: BT			
CHECKED BY: KV	SCALE: As Shown	PROJECT NUMBER: 744653.71000	
SUBMITTED BY: DS	DATE: July 2007	PAGE NUMBER:	
	FILE: X:\GIS\Site_inspections_sw\Maps\midland_tx\Fig3B_aaf.mxd		



SAMPLING RATIONALE  
Midland Army Airfield, Midland County, Texas

Sample ID*	Sample Coordinates		Media	Analysis	Munitions	Rationale
	Longitude	Latitude				
MAAF-BP1-SS-02-01	-102.21363	31.95079	Soil	Lead, Explosives	M38A2, Practice bomb, 100lbs M3 and M5 Spotting Charges M1A1 Spotting Charge AN-M30A1 100lb M47, Incendiary Bomb, 100-lb	Sample around known burial pits, where DMM has been observed.
MAAF-BP2-SS-02-02	-102.21530	31.95105	Soil	Lead, Explosives	M38A2, Practice bomb, 100lbs M3 and M5 Spotting Charges M1A1 Spotting Charge AN-M30A1 100lb M47, Incendiary Bomb, 100-lb	Sample around known burial pits, where DMM has been observed.
MAAF-SR-SS-02-03	-102.21919	31.94046	Soil	Lead, antimony, copper; PAHs	Small Arms, General	Sample in skeet range fan.
MAAF-SR-SS-02-04	-102.21710	31.94092	Soil	Lead, antimony, copper; PAHs	Small Arms, General	Sample in skeet range fan.
MAAF-SR-SS-02-05	-102.21711	31.93969	Soil	Lead, antimony, copper; PAHs	Small Arms, General	Sample in skeet range fan.
MAAF-SR-SS-02-06	-102.21647	31.93869	Soil	Lead, antimony, copper; PAHs	Small Arms, General	Sample in skeet range fan.
MAAF-RL-SS-02-07	-102.21205	31.93775	Soil	PAHs	NA	Background sample.
MAAF-DS-SS-02-08	TBD	TBD	Soil	Lead, antimony, copper; PAHs	NA	Discretionary sample for SI Field Team use.
MAAF-DS-SS-02-09	TBD	TBD	Soil	Lead, antimony, copper; PAHs	NA	Discretionary sample for SI Field Team use.
MAAF-GW-01	-102.22040	31.94128	Groundwater	Lead**, antimony, copper; Explosives; PAHs	M38A2, Practice bomb, 100lbs M3 and M5 Spotting Charges M1A1 Spotting Charge AN-M30A1 100lb M47, Incendiary Bomb, 100-lb	Sample nearby groundwater well.

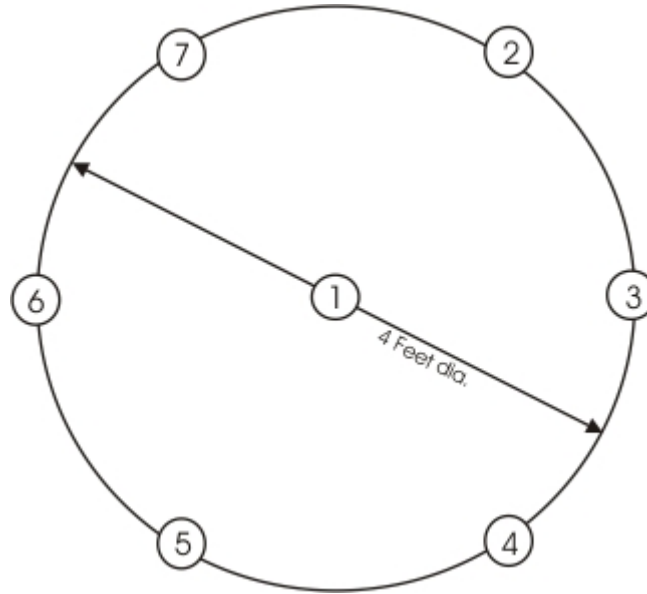
\* - Sample depth of 2” to 6” is left to the discretion of the SI Field Team.  
\*\* - Groundwater sample will only be analyzed for lead if groundwater is perched.

## Analytical Parameters and Methods

Parameter	Method
<b>EXPLOSIVES</b>	
Hexahydro-1,3,5-trinitro-1,3,5-triazine	SW8330
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	SW8330
2,4,6-Trinitrotoluene (TNT)	SW8330
1,3,5-Trinitrobenzene	SW8330
1,3-Dinitrobenzene	SW8330
2,4-Dinitrotoluene	SW8330
2,6-Dinitrotoluene	SW8330
2-Amino-4,6-dinitrotoluene	SW8330
2-Nitrotoluene	SW8330
3-Nitrotoluene	SW8330
4-Amino-2,6-dinitrotoluene	SW8330
4-Nitrotoluene	SW8330
Nitrobenzene	SW8330
Nitroglycerin	SW8330
Methyl-2,4,6-trinitrophenylnitramine	SW8330
Pentaerythritol Tetranitrate (PETN)	SW8330
<b>METALS</b>	
Antimony	SW6020
Copper	SW6020
Lead	SW6020
<b>PAHs</b>	
Acenaphthylene	SW8270C
Anthracene	SW8270C
Benz(a)anthracene	SW8270C

Parameter	Method
Benz(a)pyrene	SW8270C
Benz(b)fluoranthene	SW8270C
Benz(k)fluoranthene	SW8270C
Benz(g,h,i)perylene	SW8270C
Chrysene	SW8270C
Dibenz(a,h)anthracene	SW8270C
Fluoranthene	SW8270C
Fluorene	SW8270C
Indeno(1,2,3-cd)pyrene	SW8270C
Naphthalene	SW8270C
Phenanthrene	SW8270C

# Proposed Sampling Layout for Composite Samples



TPP Team		EM 200-1-2, Paragraph 1.1.1	
Decision Makers			
Customer	USACE Fort Worth District (CESWF)		
Project Manager	Emily Seidel, CESWF		
Regulators	Texas Commission on Environmental Quality, Kate McCarthy and Ralph Johnson; USEPA Region 6, Gary Miller		
Primary Stakeholders	City of Midland		
Data Types	Data Users	Data Gatherer	
Demographics/Land Use	Risk, Responsibility, and Compliance Perspectives	Parsons (Senior Scientist, Risk Specialist)	
Site Conditions	Remedy Perspective	Parsons (Geologist, Senior Scientist)	
Munitions and Explosives of Concern (MEC)	Risk and Remedy Perspectives	Parsons (UXO Technician III or higher, Risk Specialist, Senior Scientist)	
Munitions Constituents (MC)	Risk and Remedy Perspectives	Parsons (Chemist, Risk Specialist, Senior Scientist)	
Archaeology	Compliance and Remedy Perspectives	CESWF, Parsons (Staff Scientist, Senior Scientist)	
Endangered Species	Risk and Compliance Perspectives	CESWF, Parsons (Staff Scientist, Risk Specialist)	

CUSTOMER'S GOALS		EM 200-1-2, Paragraph 1.1.2	
Areas of concern (AOC)	Contaminant Issues	Future Land Use	Site-specific Closeout Goal (if applicable)
Skeet Range	MC	Airport	See below
Burial Pit No. 1	MC, MEC	Airport	See below
Burial Pit No. 2	MC, MEC	Airport	See below
Site Closeout Statement			
To manage the munitions and explosives of concern (MEC) and munitions constituents (MC) risk through a combination of remedial action, administrative controls, and public education; thereby rendering the site as safe as reasonably possible to humans and the environment and conducive to the anticipated future land use.			
Customer's Schedule Requirements			
Site Investigation and Reporting Complete by <b>April 18, 2008</b>			
Customer's Site Budget			
Site Investigation and Reporting: Fully funded for SI phase			

IDENTIFY SITE APPROACH		
EXISTING SITE INFORMATION & DATA EM 200-1-2, Paragraph 1.1.3 and 1.2.1		
Attachment(s) to Phase I TPP Memorandum	Located at Repository	Preliminary Conceptual Site Model
Preliminary Assessment (Archives Search Report)	N/A for SI Phase; Implemented in post-SI Phase as warranted	No
Site-Specific SI Work Plan	N/A for SI Phase; Implemented in post-SI Phase as warranted	Yes
POTENTIAL POINTS OF COMPLIANCE EM 200-1-2, Paragraph 1.2.1.3		
Determination of absence or presence of MEC/MC		
If MC is detected, comparison against TRRP residential 30-acre Protective Concentration Levels (PCLs) to determine if further MC evaluation during RI/FS is warranted.		
Use of regional background or MQL if higher, as allowed by TCEQ		
Avoidance of sensitive conditions: wetlands, endangered species, archaeological sites		
MEDIA OF POTENTIAL CONCERN EM 200-1-2, Paragraph 1.2.1.4		
Qualitative review of MEC presence.		
Quantitative screening of MC in soil.		
SITE OBJECTIVES EM 200-1-2, Paragraph 1.2.2		
Collection of sufficient MEC and MC data to support the RI/FS or NDAI.		
Eliminate from further consideration those releases that pose no significant threat to public health or the environment.		
Collection of sufficient data to perform MRSPP scoring and USEPA to conduct MC-related HRS		
Completion of the SI.		
<i>See Programmatic and Site-Specific Work Plan</i>		
<i>See Attached Worksheets Developed by the Project Team</i>		
REGULATOR AND STAKEHOLDER PERSPECTIVES EM 200-1-2, Paragraph 1.2.3		
Regulators	Community Interests / Others	
TCEQ requested 2 discretionary soil samples be available for the SI Field Team.	NA	
TCEQ requested that soil samples be taken 2" to 6" deep in duned areas.		
PROBABLE REMEDIES EM 200-1-2, Paragraph 1.2.4		
RI/FS characterization, if not NDAI		
Institutional controls / public education		
Remedial Action		
EXECUTABLE STAGES TO SITE CLOSEOUT EM 200-1-2, Paragraph 1.2.5		
Site Inspection		
NDAI, portions as appropriate		
RI/FS		
Proposed Plan		
Decision Document		
Remedial Design (RD)		
Remedial Action (as necessary)		
Longterm Management		
Recurring Review		



IDENTIFY CURRENT PROJECT		
SITE CONSTRAINTS AND DEPENDENCIES EM 200-1-2, Paragraph 1.3.1		
<u>Administrative Constraints and Dependencies</u>		
Rights of Entry (ROE)		
Fieldwork schedule coordination		
Cultural Resources		
Funding beyond the SI		
Concurrent planning programs		
Scheduling		
<u>Technical Constraints and Dependencies</u>		
Property owner/leaseholder site activities (Site access)		
MEC avoidance screening of MC sample locations for safety		
Cultural Resources		
Topography/vegetation		
Environmentally sensitive areas		
Minimize impact to cattle and petroleum exploration operations		
<u>Legal and Regulatory Milestones and Requirements</u>		
Consistent with CERCLA and NCP, and applicable state and federal regulations		
Public, stakeholder, and regulatory involvement and review of key documents (see schedule)		
Soil screening levels to include the most conservative of the Texas Risk Reduction Program (TRRP) Residential Tier 1 30-acre Protective Concentration Levels (PCLs). Regional background levels will be used to assess metals.		
Seek regulatory concurrence on key documents.		
CURRENT EXECUTABLE STAGE EM 200-1-2, Paragraph 1.3.3		
Site Inspection (TPP Memorandum, Site-Specific Work Plan, SI Report Recommendation with TPP Mtg #2)		
Basic (For Current Projects)	Optimum (For Future Projects)	Excessive (Objectives that do not lead to site closeout)
Site Inspection	RI/FS or NDAI	

### **Acronyms**

AOC - Area of Concern  
 CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act  
 CESWF - U.S. Corps of Engineers, Fort Worth District  
 EPA - U.S. Environmental Protection Agency  
 FUDS - Formerly Used Defense Sites  
 HRS - Hazard Ranking System  
 MC - munitions constituents  
 MEC - munitions and explosives of concern  
 MRSP - Munitions Response Site Prioritization Protocol  
 MSSS - Medium Specific Screening Level  
 NCP - National Contingency Plan  
 NDAI - No Department of Defense Action Indicated  
 PAH - Polycyclic Aromatic Hydrocarbons  
 PCL - Protective Concentration Levels  
 PQL - Practical Quantitation Limit  
 RI/FS - Remedial Investigation and Feasibility Study  
 SI - Site Inspection  
 TBD - To be determined  
 TCEQ - Texas Commission on Environmental Quality  
 TPP - Technical Project Planning  
 TRRP - Texas Risk Reduction Program

# PROJECT OBJECTIVES WORKSHEET

SITE: **Skeet Range**  
PROJECT: **Midland Army Airfield**

PAGE 1 of 3

Site Objective <sup>a</sup>				Data Needs	Data Collection Methods	Data User(s)	Project Objective Classification <sup>d</sup>	
Number	Executable Stage <sup>b</sup>		Description					Source <sup>c</sup>
	Current	Future						
1	Yes		Determine presence/lack thereof of MEC	ASR, Recon	Are there any MEC? If so what type are they, where are they and what hazard do they pose. Current and future LU.	Qualitative Recon	Risk and Remedy Perspectives	Basic
2	Yes		Determine if the concentration of MC is high enough to pose a risk to human health or the environment	Soil sampling	Is there any MC present in soil samples # 3 through 6? If present, what is it? To what degree is it present? Is it above the designated comparison criteria? And if so, is action required? Current and future LU.	Sample collection IAW PSAP and SS-SAP	Risk and Remedy Perspectives	Basic
3								
4								

a) Refer to EM 200-1-2, Paragraph 1.2.2

b) Refer to EM 200-1-2, Paragraph 1.2.5

c) For example, Meeting with Customer/stakeholder/Regulator, State Regulation\_\_\_\_,

d) Classification of project objectives can only occur after the current project has been identified. Refer to EM 200-1-2, Paragraph 1.3.3.

ASR - Archive Search Report

LU - Land Use

IAW - In accordance with

MC - Munitions Constituents

MEC - Munitions and Explosives of Concern

PSAP - Programmatic Sampling & Analysis Plan

SS-SAP - Site Specific-SAP

# PROJECT OBJECTIVES WORKSHEET

SITE: **Burial Pit No. 1**  
PROJECT: **Midland Army Airfield**

PAGE 2 of 3

Site Objective <sup>a</sup>				Data Needs	Data Collection Methods	Data User(s)	Project Objective Classification <sup>d</sup>	
Number	Executable Stage <sup>b</sup>		Description					Source <sup>c</sup>
	Current	Future						
1	Yes		Determine presence/lack thereof of MEC	ASR, Recon	Are there any MEC? If so what type are they, where are they and what hazard do they pose. Current and future LU.	Qualitative Recon	Risk and Remedy Perspectives	Basic
2	Yes		Determine if the concentration of MC is high enough to pose a risk to human health or the environment	Soil sampling	Is there any MC present in soil sample # 1? If present, what is it? To what degree is it present? Is it above the designated comparison criteria? And if so, is action required? Current and future LU.	Sample collection IAW PSAP and SS-SAP	Risk and Remedy Perspectives	Basic
3								
4								

a) Refer to EM 200-1-2, Paragraph 1.2.2

b) Refer to EM 200-1-2, Paragraph 1.2.5

c) For example, Meeting with Customer/stakeholder/Regulator, State Regulation\_\_\_\_.

d) Classification of project objectives can only occur after the current project has been identified. Refer to EM 200-1-2, Paragraph 1.3.3.

ASR - Archive Search Report

LU - Land Use

IAW - In accordance with

MC - Munitions Constituents

MEC - Munitions and Explosives of Concern

PSAP - Programmatic Sampling & Analysis Plan

SS-SAP - Site Specific-SAP

# PROJECT OBJECTIVES WORKSHEET

SITE: **Burial Pit No. 2**  
PROJECT: **Midland Army Airfield**

PAGE 3 of 3

Site Objective <sup>a</sup>				Data Needs	Data Collection Methods	Data User(s)	Project Objective Classification <sup>d</sup>	
Number	Executable Stage <sup>b</sup>		Description					Source <sup>c</sup>
	Current	Future						
1	Yes		Determine presence/lack thereof of MEC	ASR, Recon	Are there any MEC? If so what type are they, where are they and what hazard do they pose. Current and future LU.	Qualitative Recon	Risk and Remedy Perspectives	Basic
2	Yes		Determine if the concentration of MC is high enough to pose a risk to human health or the environment	Soil sampling	Is there any MC present in soil sample # 2? If present, what is it? To what degree is it present? Is it above the designated comparison criteria? And if so, is action required? Current and future LU.	Sample collection IAW PSAP and SS-SAP	Risk and Remedy Perspectives	Basic
3								
4								

a) Refer to EM 200-1-2, Paragraph 1.2.2

b) Refer to EM 200-1-2, Paragraph 1.2.5

c) For example, Meeting with Customer/stakeholder/Regulator, State Regulation\_\_\_\_.

d) Classification of project objectives can only occur after the current project has been identified. Refer to EM 200-1-2, Paragraph 1.3.3.

ASR - Archive Search Report

LU - Land Use

IAW - In accordance with

MC - Munitions Constituents

MEC - Munitions and Explosives of Concern

PSAP - Programmatic Sampling & Analysis Plan

SS-SAP - Site Specific-SAP

DATA QUALITY OBJECTIVE WORKSHEET

SITE: **Midland Army Airfield**

PROJECT: **MMRP Site Inspection / FUDS No. K06TX019901**

DQO STATEMENT NUMBER: **1 of 4**

<b>DQO Element Number<sup>a</sup></b>	<b>DQO Element Description<sup>a</sup></b>	<b>Site-Specific DQO Statement</b>
<b>Intended Data Use(s):</b>		
1	Project Objective(s) Satisfied	Evaluate presence/lack thereof of MEC
<b>Intended Need Requirements:</b>		
2	Data User Perspective(s)	Risk, Remedy
3	Contaminant or Characteristic of Interest	MEC, Munitions Debris
4	Media of Interest	N/A
5	Required Sampling Locations or Areas and Depths	N/A
6	Number of Samples Required	N/A
7	Reference Concentration of Interest or Other Performance Criteria	Indications of targets or impact areas. Visual confirmation of MEC.
<b>Appropriate Sampling and Analysis Methods:</b>		
8	Sampling Method	Qualitative Reconnaissance
9	Analytical Method	N/A

<sup>a</sup> Refer to EM 200-1-2, Paragraph 4.2.1

# DATA QUALITY OBJECTIVE WORKSHEET

SITE: **Midland Army Airfield**

PROJECT: **MMRP Site Inspection / FUDS No. K06TX019901**

DQO STATEMENT NUMBER: **2 of 4**

DQO Element Number <sup>a</sup>	DQO Element Description <sup>a</sup>	Site-Specific DQO Statement
<b>Intended Data Use(s):</b>		
1	Project Objective(s) Satisfied	Evaluate presence/lack thereof of MC
<b>Intended Need Requirements:</b>		
2	Data User Perspective(s)	Risk, Remedy
3	Contaminant or Characteristic of Interest	Explosives, antimony, copper, lead, and PAHs
4	Media of Interest	Surface soil and groundwater as determined during TPP process
5	Required Sampling Locations or Areas and Depths	Shown on Figures 3A and 3B, as determined by TPP Team. Locations based on burial pits and skeet range. 2" to 6" depth composite CRREL sampling in duned areas, otherwise, 2".
6	Number of Samples Required	7 surface soil samples, plus associated QC samples. Up to 2 discretionary samples.
7	Reference Concentration of Interest or Other Performance Criteria	Texas Risk Reduction Program Residential Tier 1 30-acre PCLs
<b>Appropriate Sampling and Analysis Methods:</b>		
8	Sampling Method	Composite samples in accordance with the PSAP and PSAP Addendum
9	Analytical Method	Explosives (SW8330); antimony, copper, lead (SW6020); PAHs (SW8270C)

<sup>a</sup> Refer to EM 200-1-2, Paragraph 4.2.1

# DATA QUALITY OBJECTIVE WORKSHEET

SITE: **Midland Army Airfield**

PROJECT: **MMRP Site Inspection / FUDS No. K06TX019901**

DQO STATEMENT NUMBER: **3 of 4**

DQO Element Number <sup>a</sup>	DQO Element Description <sup>a</sup>	Site-Specific DQO Statement
<b>Intended Data Use(s):</b>		
1	Project Objective(s) Satisfied	Completion of MRSPP Scoring sheets
<b>Intended Need Requirements:</b>		
2	Data User Perspective(s)	Risk and Remedy
3	Contaminant or Characteristic of Interest	Explosives, chemical, and health hazards, if any, associated with field team observations
4	Media of Interest	Surface Soil and Groundwater as determined during TPP process.
5	Required Sampling Locations or Areas and Depths	NA
6	Number of Samples Required	NA
7	Reference Concentration of Interest or Other Performance Criteria	Completion of Explosive Hazard Evaluation (EHE) Tables 1-10, Chemical Warfare Materiel Hazard Evaluation (CWMHE) Tables 11-20, and Health Hazard Evaluation (HHE) Tables 21-25
<b>Appropriate Sampling and Analysis Methods:</b>		
8	Sampling Method	N/A
9	Analytical Method	N/A

<sup>a</sup> Refer to EM 200-1-2, Paragraph 4.2.1

DATA QUALITY OBJECTIVE WORKSHEET

SITE: **Midland Army Airfield**

PROJECT: **MMRP Site Inspection / FUDS No. K06TX019901**

DQO STATEMENT NUMBER: **4 of 4**

<b>DQO Element Number<sup>a</sup></b>	<b>DQO Element Description<sup>a</sup></b>	<b>Site-Specific DQO Statement</b>
<b>Intended Data Use(s):</b>		
1	Project Objective(s) Satisfied	Collection of USEPA HRS MC-related information
<b>Intended Need Requirements:</b>		
2	Data User Perspective(s)	Risk, Compliance, and Remedy
3	Contaminant or Characteristic of Interest	Explosives, lead, copper, antimony, and PAHs associated with MRSs and the observations of the field team
4	Media of Interest	Surface Soil and groundwater as determined during TPP process
5	Required Sampling Locations or Areas and Depths	N/A
6	Number of Samples Required	N/A
7	Reference Concentration of Interest or Other Performance Criteria	Results of the MC analytical testing for USEPA to complete the MC-related HRS scoring.
<b>Appropriate Sampling and Analysis Methods:</b>		
8	Sampling Method	N/A
9	Analytical Method	N/A

<sup>a</sup> Refer to EM 200-1-2, Paragraph 4.2.1



**Table 1a Chemical-Specific Data Quality Objectives, Laboratory MDLs and PQLs for Soil Samples  
Midland AAF, Midland County, Texas**

Analyte	Background Data <sup>1</sup>	Human Health Screening Values Residential Soil (mg/kg)	STL Denver Method Detection Limits (MDL) and Practical Quantitation Limits (PQL) (mg/kg)	
	Regional Background Data (mg/kg) <sup>(2)</sup>	Texas Risk Reduction Program Rule Tier 1, 30-acre PCLs <sup>(3)</sup>	STL MDL <sup>(4)</sup>	STL PQL
Hexahydro-1,3,5-trinitro-1,3,5-triazine	NA	0.018	0.09	0.25
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	NA	1.172	0.08	0.25
2,4,6-Trinitrotoluene	NA	0.086	0.06	0.25
1,3,5-Trinitrobenzene	NA	0.910	0.07	0.25
1,3-Dinitrobenzene	NA	0.004	0.06	0.25
2,4-Dinitrotoluene <sup>(1)</sup>	NA	0.003	0.05	0.25
2,6-Dinitrotoluene <sup>(1)</sup>	NA	0.002	0.05	0.25
2-Amino-4,6-dinitrotoluene	NA	85.5	0.05	0.25
2-Nitrotoluene	NA	0.015	0.08	0.25
3-Nitrotoluene	NA	1.844	0.04	0.25
4-Amino-2,6-dinitrotoluene	NA	0.033	0.04	0.25
4-Nitrotoluene	NA	0.203	0.1	4.0
Nitrobenzene	NA	0.044	0.06	0.25
Nitroglycerin	NA	0.005	1.68	5.0
Methyl-2,4,6-trinitrophenylnitramine	NA	0.552	0.05	0.50
Pentaerythritol Tetranitrate	NA	1238.680	1.32	4.0
Antimony	1	2.7	0.0633	0.25
Copper	15	520	0.081	0.32
Lead	15	1.514	0.05	0.40
Acenaphthene	NA	118	0.00016	0.005
Acenaphthylene	NA	204	0.00017	0.005
Anthracene	NA	3445	0.000133	0.005
Benz(a)anthracene	NA	5.6	0.000146	0.005
Benz(a)pyrene	NA	0.564	0.000143	0.005

Analyte	Background Data <sup>(1)</sup>	Human Health Screening Values Residential Soil (mg/kg)	STL Denver Method Detection Limits (MDL) and Practical Quantitation Limits (PQL) (mg/kg)	
	Regional Background Data (mg/kg) <sup>(2)</sup>	Texas Risk Reduction Program Rule Tier 1, 30-acre PCLs <sup>(3)</sup>	STL MDL <sup>(4)</sup>	STL PQL
Benz(b)fluoranthene	NA	5.7	0.000145	0.005
Benz(k)fluoranthene	NA	57.2	0.00013	0.005
Benz(g,h,i)perylene	NA	1780	0.000199	0.005
Chrysene	NA	560	0.000192	0.005
Dibenz(a,h)anthracene	NA	0.55	0.000243	0.005
Fluoranthene	NA	958.6	0.000209	0.005
Fluorene	NA	149	0.000227	0.005
Indeno(1,2,3-cd)pyrene	NA	5.7	0.000244	0.005
Naphthalene	NA	15.6	0.000326	0.005
Phenanthrene	NA	208	0.000312	0.005
Pyrene	NA	558	0.000177	0.005

(1) – Carcinogenic DNT mixture values used if more conservative than noncarcinogenic isomer-specific values.

(2) – Values from 30 Texas Administrative Code (TAC) §350.51(m) ([http://info.sos.state.tx.us/fids/30\\_0350\\_0051-3.html](http://info.sos.state.tx.us/fids/30_0350_0051-3.html)).

(3) – TRRP Tier 1 levels (residential 30-acre source area) lower of  $T_{\text{SoilComb}}$  and  $G_{\text{SoilIng}}$ , dated March 2007 (<http://www.tceq.state.tx.us/remediation/trrp/trrppcls.html>).

(4) – MDLs are updated annually by the laboratory during MDL studies. Values listed here are from Parsons, 2006b. Actual values may vary slightly.

NA – Not available.

**Table 1b Chemical Specific Data Quality Objectives, Laboratory MDLs and PQLs for Groundwater Samples  
Midland AAF, Midland County, Texas**

Analyte	Human Health Screening Values Groundwater (µg/L)	STL Denver Method Detection Limits (MDL) and Practical Quantitation Limits (PQL) (µg/L) <sup>(3)</sup>	
	Texas Risk Reduction Program Rule Tier 1 Residential PCLs <sup>(2)</sup>	STL MDL	STL PQL
Hexahydro-1,3,5-trinitro-1,3,5-triazine	8.295	0.0523	0.4
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	1222	0.0867	0.4
2,4,6-Trinitrotoluene	12.22	0.0724	0.4
1,3,5-Trinitrobenzene	733	0.2	1.0
1,3-Dinitrobenzene	2.4	0.0887	0.4
2,4-Dinitrotoluene <sup>(1)</sup>	1.34	0.0838	0.4
2,6-Dinitrotoluene <sup>(1)</sup>	1.34	0.0645	0.4
2-Amino-4,6-dinitrotoluene	4	0.0507	0.4
2-Nitrotoluene	4	0.0855	0.4
3-Nitrotoluene	488.8	0.0834	0.4
4-Amino-2,6-dinitrotoluene	4	0.0577	0.4
4-Nitrotoluene	54	0.2	1.0
Nitrobenzene	12	0.091	0.4
Nitroglycerin	1.7	0.921	4.0
Methyl-2,4,6-trinitrophenylnitramine	98	0.0793	0.4
Pentaerythritol Tetranitrate	9777	0.416	2
Antimony	6	0.07	6.0
Copper	1300	0.56	2.0
Lead	15	0.18	3
Acenaphthene	1467	0.00587	0.1
Acenaphthylene	1467	0.00222	0.1
Anthracene	7333	0.012	0.1
Benz(a)anthracene	1.25	0.00474	0.1
Benz(a)pyrene	0.2	0.00795	0.1
Benz(b)fluoranthene	1.25	0.00680	0.1
Benz(k)fluoranthene	1.25	0.00572	0.1
Benz(g,h,i)perylene	733	0.00727	0.1
Chrysene	125	0.00877	0.1
Dibenz(a,h)anthracene	0.2	0.00863	0.1

Analyte	Human Health Screening Values Groundwater (µg/L)	STL Denver Method Detection Limits (MDL) and Practical Quantitation Limits (PQL) (µg/L) <sup>(3)</sup>	
	Texas Risk Reduction Program Rule Tier 1 Residential PCLs <sup>(2)</sup>	STL MDL	STL PQL
Fluoranthene	978	0.00394	0.1
Fluorene	978	0.00650	0.1
Indeno(1,2,3-cd)pyrene	1.25	0.00733	0.1
Naphthalene	789	0.0144	0.1
Phenanthrene	733	0.00802	0.1
Pyrene	733	0.00420	0.1

(1) – Carcinogenic DNT mixture values used if more conservative than noncarcinogenic isomer-specific values.

(2) - TRRP Tier 1 levels (residential <sup>GW</sup>GW<sub>Ing</sub>), dated March 2007 (<http://www.tceq.state.tx.us/remediation/trrp/trrppcls.html>).

(3) - MDLs are updated annually by the laboratory during MDL studies. Values listed here are from Parsons, 2006b. Actual values may vary slightly.

NA – Not available

# **Technical Project Planning Meeting #1 Presentation Slides**

The following slides have been provided as a copy of the TPP Meeting #1 presentation. Changes to the technical approach, schedule, sample locations, sample numbers, and any other changes made during the TPP meeting are reflected in the TPP Memorandum and the remainder of the associated documents. The slides on the following pages are shown as they were presented.

## Midland Army Air Field

K06TX019901

Target Range No. 13

K06TX018701

Target Range No. 14

K06TX018601

Target Range No. 16

K06TX018401

Target Range No. 17

K06TX018301

### Technical Project Planning for Site Inspection

Midland County, Texas

April 18, 2007



US Army Corps of Engineers  
Albuquerque District

## Agenda

- Introductions
- Overview of the Formerly Used Defense Site (FUDS) and Military Munitions Response Programs (MMRP)
- Project Phases
- Site History/Technical Approach (Parsons)
- TPP Presentation (Parsons)



US Army Corps of Engineers  
Albuquerque District

## Contact Information

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US Army Corps of Engineers  
Albuquerque District

## Formerly Used Defense Site (FUDS) Primer

Why	Congress 1986 ' <i>correction, detection and disposal of unexploded ordnance which creates an imminent and substantial endangerment....</i> '
Where	<i>"the Secretary shall carry out all response actions under CERCLA at properties <u>owned by, leased or otherwise possessed by the United States</u>" - USACE assigned</i>
Who	USACE has almost 10,000 FUDS identified nationwide and funding is limited
How	Military Munitions Response Program (MMRP) and Hazardous Toxic Radioactive Waste (HTRW) Program use the DoD investigation/cleanup methods based on Env. Protection Agency (EPA) CERCLA process as regulated in ER 200-3-1, the FUDS Program Policy



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## Legal Drivers

- 1980 CERCLA
- 1986 SARA
  - 10 U.S.C. 2701 DERP- Defense Environmental Restoration Program.
  - Three goals of program:
    - Cleanup of HTRW contamination
    - Correction of other environmental damage (such as detection and disposal of unexploded ordnance (UXO))
    - Demolition and removal of unsafe buildings and structures.
  - DERP applies to currently owned DoD facilities (IRP) and formerly used defense sites (FUDS).



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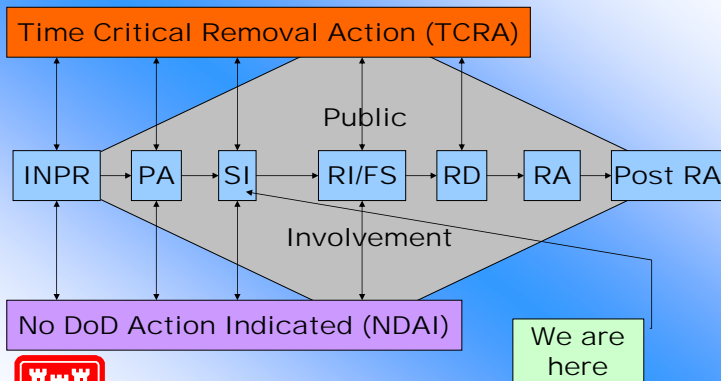
## Legal Drivers, cont.

- FUDS Program-
  - Authorized under DERP and CERCLA Section 104
  - Secretary of Defense authorized to conduct response
  - DoD delegated authority to the Army
  - The Secretary of the Army established USACE as the DoD executive agent for environmental restoration activities at FUDS.



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## CERCLA Process Flow



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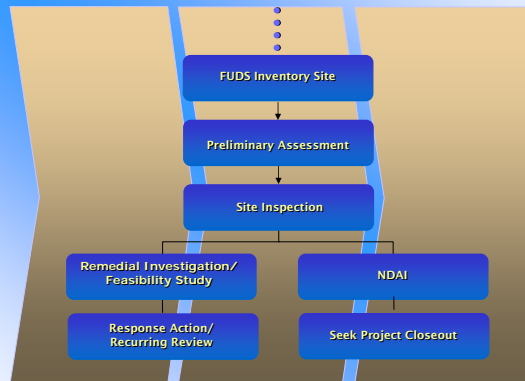
## SI Objectives

- Primary Objective: To determine whether a project site identified during the INPR phase and retained at the Preliminary Assessment (PA)/Archives Search Report (ASR) phase warrants further evaluation or response action.
  - No DoD Action Indicated (NDAI)
  - TCRA – Immediate and Imminent Threat
  - RI/FS – Characterization Phase
    - RA – Cleanup phase
    - Institutional Controls (signage, brochures, etc.)



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## Anticipated MMRP SI Process Flow Outcome



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## SI Objectives

- **Secondary Objectives:**
  - Collect or develop data for EPA's Hazard Ranking Scoring (HRS) System.
  - Collect data to focus RI/FS, if appropriate.
  - Collect data to complete USACE's Munitions Response Site Prioritization Protocol (MRSP).



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## SI Scope – Midland AAF Target Ranges

- Implement Technical Project Planning (TPP)
  - Stakeholder Involvement
  - Conceptual Site Model
  - Data Quality Objectives
  - TPP Worksheets
  - Present field results (Post SI Report)
- Conduct Site Visit to augment ASR data and to gather additional historical and site-specific data
- Confirm the presence or absence of MC
- Confirm the presence or absence of MEC
- Recommend next action.



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## SI Requirements

- In accordance with SI guidance, the primary objective is attained by collecting the minimum amount of information necessary to:
  - Determine the potential need for an immediate removal action (TCRA);
  - Eliminate from further consideration those releases that pose no significant threat to public health or the environment (NDAI determination);
  - Collect data, as appropriate, to characterize the release for effective and rapid initiation of an RI/FS, if appropriate.
- Key Footnote – This SI only addresses Conventional MC and MEC that were left behind by DoD use of the property. Any HTRW or Chemical MMRP considerations will be addressed by a separate project.



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## Typical SI Project Activities

- TPP - Solicit Stakeholder Input
  - Coordinate with stakeholders in order to incorporate their goals, concerns, and comments into the SI process.
- Right of Entry
  - Obtain permission to enter property.
- Biological & Cultural Resources
  - Avoidance of sensitive conditions: wetlands, endangered species, archaeological sites.



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## Typical Activities, cont.

- Historical Documentation Review
- Site Specific Work Plan
- Field Work
  - Qualitative Reconnaissance
  - MC Sampling
- Site Inspection Report
  - Record Field Work Activities
  - Analyze Data
  - Make recommendations



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## Midland Army Air Field and Target Ranges 13, 14, 16 and 18

Site History/Technical  
Approach  
Parsons



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Albuquerque District



## Fort Worth District

### Midland Army Airfield and Target Range No. 13 Target Range No. 14 Target Range No. 16 Target Range No. 17

Midland County, Texas

Technical Project Planning  
For  
Formerly Used Defense Site  
Site Inspection

April 18, 2007



## Fort Worth District

### Preface

- **Site Inspection** (SI) is simple straightforward process. Focus on most-likely contaminated areas.
- This is a **TEAM** effort.
  - Everyone here today is here for a reason.
  - Please feel free to comment at any time during the presentations.
  - Success depends on your input to the process.



## Fort Worth District

### Preface

- Midland AAF and associated Target Range SI Technical Approach was developed through a collaborative effort between Parsons and the U.S. Army Corps of Engineers (USACE).
  - Intent is to provide a baseline starting point for discussions, not to present a predetermined decision for acceptance.
  - We are relying on our TEAM to provide or direct us to any information in existing documents to ensure correct approach.
- Concurrence Request
  - As such, subsequent comments on the subsequent Draft Technical Project Planning Memo anticipated to be minimal.



## Fort Worth District

### References

#### SI Planning Documents

- Programmatic Work Plan (2005). Prepared by Parsons. Addresses big picture concerns and repetitive actions. Reviewed/Finalized and available through your local Corps District (Fort Worth).
- Programmatic Sampling and Analysis Plan (2005). Prepared by USACE and also available through Fort Worth District.



## Fort Worth District

### References

#### Site-Specific Documents

- Inventory Project Report [INPR]: Prepared by USACE to evaluate site eligibility. Yes or No, did Department of Defense acquire, lease, occupy, or otherwise utilize the property for military training activities?
- Archives Search Report [ASR]: Prepared by USACE and generally equivalent to a CERCLA Preliminary Assessment (PA).
- ASR Supplement: Desktop Review. Re-evaluated Areas of Concern (AOCs) and revisited Risk Assessment Code (RAC) scores.



## Fort Worth District

### Basic Definitions

**MEC** – Specific categories of military munitions that may pose unique explosives safety risks. MEC includes unexploded ordnance (UXO), discarded military munitions (DMM), and explosive concentrations of munitions constituents (MC).

**MC** – Any materials originating from UXO, DMM, or other military munitions, including explosive and non-explosive materials and emission, degradation, or breakdown elements of such ordnance or munitions.



## Fort Worth District



U.S. Army Corps of Engineers

April 18, 2007

### MIDLAND AAF and TARGET RANGES No. 13, 14, 16, and 17 MIDLAND COUNTY, TEXAS

### PLANNING FOR PROJECT EXECUTION

Based On EM 200-1-2: Technical Project  
Planning (TPP) Process



## Fort Worth District

### Introduction

- Purpose
  - To achieve site closeout within project constraints
  - To involve stakeholders in project decision making
  - To systematically address complex issues
- Structure
  - Four phase process
- Spirit
  - “Structured brainstorming”





## Fort Worth District

### Key Objectives

- Understanding of stakeholder concerns
- Project goal (site closeout statement)
- Conceptual Site Model (CSM) (Dynamic)
- Project objectives (ultimate safe closure)
- Probable remedies (NDAI or RI/FS)
- Actions needed for closeout



## Fort Worth District

### Four Phases



Phase 1: Identify the project  
(90% of TPP Effort)

Describe the situation

Phase 2: Determine data needs

What *do* we know?

What *don't* we know?

Phase 3: Develop data collection options

How best to get the  
information that we  
need?

Phase 4: Finalize data collection program

(Phases 3 & 4 mostly pre-defined for munitions response projects.)



## Fort Worth District

### Team Members

- Stakeholders
  - Government Agencies - U.S. Army Corps of Engineers, Fort Worth District (CESWF)
  - Regulatory Agencies – Texas Commission on Environmental Quality (TCEQ), U.S. Environmental Protection Agency (EPA) Region 6
  - Elected Officials and Public Interest Groups – Midland County
  - Property Owners – Private landowners, City of Midland
- External Technical Resources (Technical Experts)



## Fort Worth District

### Understanding Stakeholder Concerns



- Communicate, communicate, communicate
- Identify stakeholders and their special interests
  - Identify competing interests (if any)
  - Determine key issues ("hot buttons")
- Understand special interests of local community
- Elicit regulator expectations and perspectives



## Fort Worth District

### Project Goal

- Statement of site closeout
  - What is the “walk-away” goal?
  - Goal may be influenced by:
    - Future land use
    - Regulatory status
    - Schedule and budget



## Fort Worth District

### SITE CLOSEOUT STATEMENT

To manage the potential munitions and explosives of concern (MEC) / munitions constituents (MC) risk through a combination of remedial action, administrative controls, and public education thereby rendering the site as safe as reasonably possible to humans and the environment, and conducive to the anticipated future land use.



## Fort Worth District

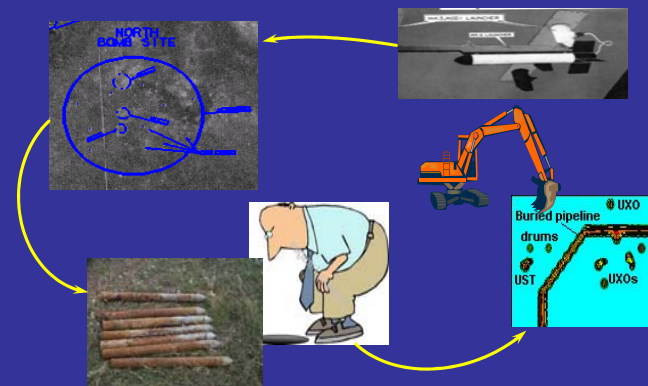
### Conceptual Site Model

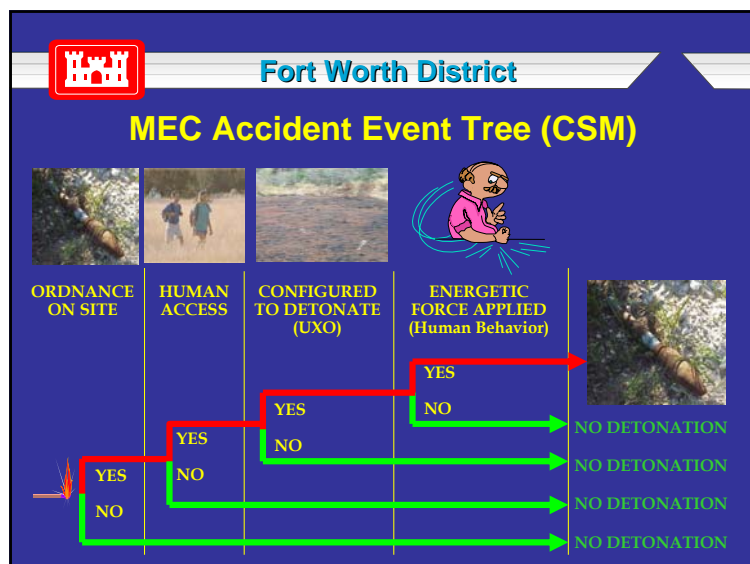
- Definition of CSM
  - A simple model of the relationships between contaminants at a site and the potential exposure pathways to human health and/or the environment.
- Examples of Exposure Pathways
  - MEC becomes exposed by erosion or other soil movement activities
  - Buried MEC may be exposed by construction crews



## Fort Worth District

### Conceptual Site Model MEC Illustration

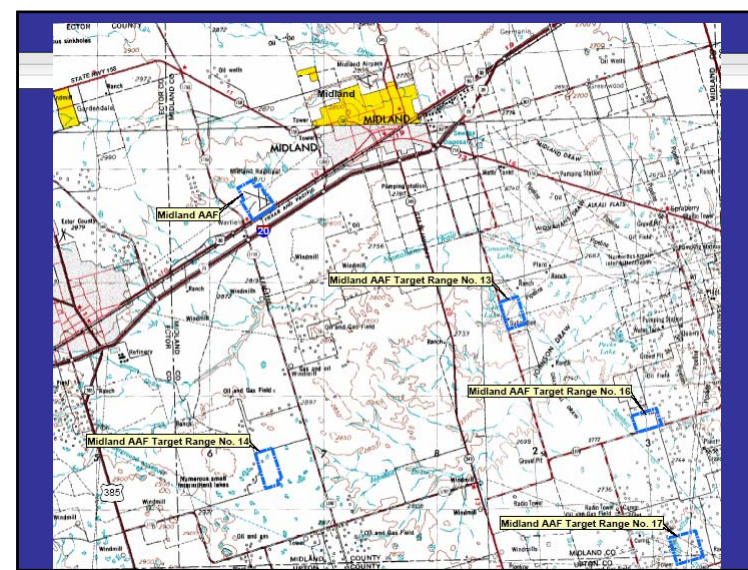




**Fort Worth District**

## Midland AAF and Target Ranges No. 13, 14, 16, & 17 Working Session

- Fort Worth District**
- ### Site History – Target Ranges *Once Upon a Time....*
- 1941: U.S. Army Air Corps acquired land for 23 practice bombing ranges in the vicinity of Midland Army Airfield. Several in Midland County:
    - Target Range No. 13, 1,255 acres, 6 targets
    - Target Range No. 14, 1,645 acres, 5 targets
    - Target Range No. 16, 1,160 acres, 6 targets
    - Target Range No. 17, 1,442 acres, 6 targets
  - 1947: DoD released land, except No. 14
  - 1948: Certificates of Clearance issued
  - 1948 – 1953: No. 14 used by Carswell AFB





## Fort Worth District

### Findings to Date – Target Ranges

- **ASR**

- Site Visits by USACE (1999-2000).
- MD observed at all four ranges. Craters observed at Target Range No. 14.
- No MEC observed and none reported.

- **2004 ASR Supplement**

- RAC score of 4 for each of the ranges (1 is highest)

### Current Conditions

- Used for oil and gas production, cattle grazing.
- No known deed restrictions.



## Fort Worth District

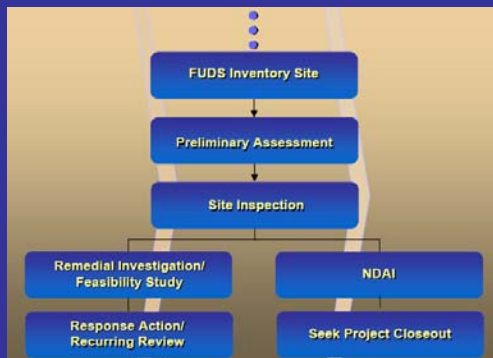
### Anticipated Outcome – Target Ranges

- No MEC has been found. However, MD has been identified during previous site visits.
- Craters observed at Target Range No. 14.
- Evidence of possible incendiary bomb use at Target Range No. 16.
- QR to evaluate the presence or absence of residual MEC.
- MC sampling – Focused on potential for explosives and indicator metals contamination in soil. White phosphorous for some samples. Groundwater where operational wells are present.
- SI activities tailored to support either RI/FS or NDAI.



## Fort Worth District

### Anticipated MMRP SI Process Flow Outcome Midland AAF Target Ranges No. 13, 14, 16, and 17



## Fort Worth District

### SI Technical Approach – Target Ranges

In accordance with SI guidance, the primary objective for the Target Ranges No. 13, 14, 16, and 17 site can be attained by implementation of the following Technical Approach:

- **Qualitative Reconnaissance (QR)**
  - Visual survey. Focused on the target areas, spiraling outward.
- **MC Sampling**
  - Sample Media: Soil. Surface water and groundwater at some sites.
  - Soil Sample Depth: 2 inches
  - Sample Locations: Biased toward the highest potential for contamination, in target and buffer areas. Proposed flexibility of 100'.





## Fort Worth District

### Conceptual Site Model – Target Ranges

- Five to six practice bombing targets per site.
- Currently used for oil and gas production, cattle grazing.
- No MEC findings reported to date.
- MD observed at each.
- Craters observed at No. 14. Possible evidence of incendiary use at No. 16
- No known historical or cultural features.
- No wetlands or ecologically important features.



## Fort Worth District

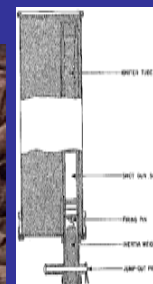
### Ordnance associated with Midland AAF Target Ranges



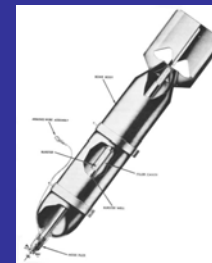
M38A2



M38A2 100-lb  
Practice Bomb Debris



M1A1 Spotting  
Charge

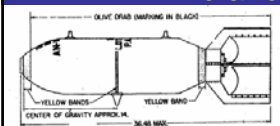


M47, 100#  
Incendiary Bomb



## Fort Worth District

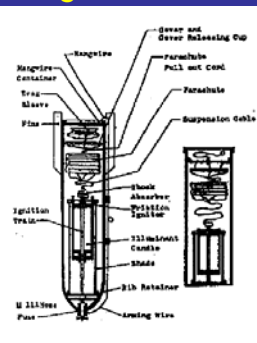
### Ordnance associated with Midland AAF Target Ranges



AN-M30 General Purpose  
100-lb Bomb (No. 14 only)



M85 Concrete  
Bomb



M26 Aircraft Parachute Flare




## Fort Worth District

### Conceptual Site Exposure Model

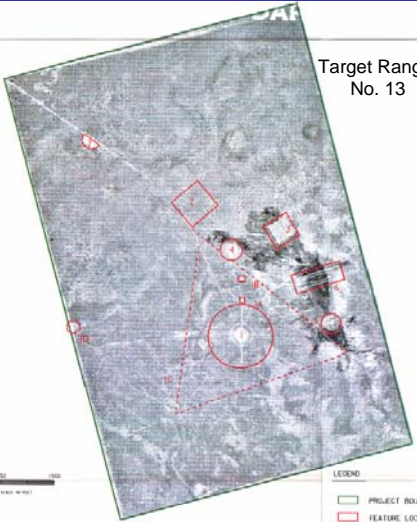
(1) Check the media that could be directly affected by the release.		(2) For each medium identified in (1), follow the top arrow and check possible transport mechanisms. Identify all other mechanisms or reference the report for details.		(3) Check exposure media identified in (2).		(4) Check exposure pathways that are complete or need further evaluation.		Identify the receptors potentially affected by each exposure pathway. Enter "C" for current receptors, "F" for future receptors, or "C/F" for both current and future receptors.			
Media	Transport Mechanisms	Exposure Media	Exposure Pathways	Current	Future	C/F	C/F	C/F	C/F	C/F	C/F
Surface Soil (0-2 ft bgs)	<input checked="" type="checkbox"/> Migration or leaching to subsurface <input checked="" type="checkbox"/> Migration or leaching to groundwater <input checked="" type="checkbox"/> Volatilization <input checked="" type="checkbox"/> Runoff or erosion <input checked="" type="checkbox"/> Uptake by plants or animals <input checked="" type="checkbox"/> Other (list):	<input checked="" type="checkbox"/> Soil <input type="checkbox"/> Groundwater	<input checked="" type="checkbox"/> Inhalation of Fugitive Dust <input checked="" type="checkbox"/> Ingestion of Soil <input checked="" type="checkbox"/> Dermal Absorption of Contaminants from Soil	C	C	C	C	C	C	C	C
Subsurface Soil (2-15 ft bgs)	<input type="checkbox"/> Migration to groundwater <input type="checkbox"/> Volatilization <input type="checkbox"/> Other (list):	<input type="checkbox"/> Groundwater	<input type="checkbox"/> Ingestion of Groundwater <input type="checkbox"/> Dermal Absorption of Contaminants in Groundwater <input type="checkbox"/> Inhalation of Volatile Compounds in Tap Water								
Groundwater	<input type="checkbox"/> Volatilization <input type="checkbox"/> Flow to surface water body <input type="checkbox"/> Uptake by plants or animals <input type="checkbox"/> Other (list):	<input type="checkbox"/> Air <input type="checkbox"/> Surface water	<input type="checkbox"/> Inhalation of Outdoor Air <input type="checkbox"/> Inhalation of Indoor Air <input type="checkbox"/> Inhalation of Fugitive Dust								
Surface Water	<input type="checkbox"/> Volatilization <input type="checkbox"/> Sedimentation <input type="checkbox"/> Uptake by plants or animals <input type="checkbox"/> Other (list):	<input type="checkbox"/> Surface water	<input type="checkbox"/> Ingestion of Surface Water <input type="checkbox"/> Dermal Absorption of Contaminants in Surface Water <input type="checkbox"/> Inhalation of Volatile Compounds in Tap Water								
Sediment	<input type="checkbox"/> Resuspension, runoff, or erosion <input type="checkbox"/> Uptake by plants or animals <input type="checkbox"/> Other (list):	<input type="checkbox"/> Sediment	<input type="checkbox"/> Direct Contact with Sediment <input type="checkbox"/> Ingestion of Wild Foods								C/F





**ASR Features**

1. Day Target
2. Square Night Target
3. Square Combat Target
4. Small Rectangular Target
5. Circular Combat Target
6. Battleship Target
7. Caliche pit




Target Range No. 13

1948 Aerial Photo

LEGEND

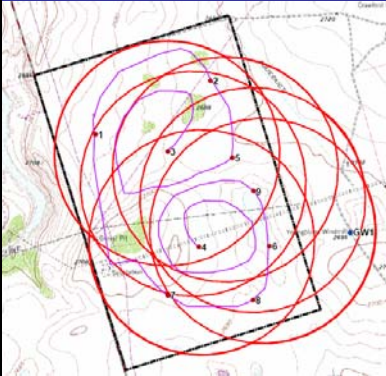
PROJECT BOUNDARY

FEATURE LOCATION



**Fort Worth District**

**SI Technical Approach**



**Target Range No. 13**

Dates Used: 1942 -1946

Potential Munitions: M38A2 100-lb Practice Bomb with M1A1 spotting charge; M47 sand-filled bomb; M85 concrete bomb, M26 aircraft parachute flare

Current Land Use: oil and gas production, cattle grazing

**Proposed MC Sampling:**

Sample Locations: 9 soil sample locations (#1-9), one groundwater sample

Analytical Parameters/Methods: Explosives (SW8330); Lead (SW-6020); White phosphorous (Lab SOP OP-SW-7580) – two soil samples only




**ASR Features**

1. Day Target
2. Square Combat Target
3. Small Rectangular Combat Target
4. Circular Combat Target
5. Battleship Target
6. Caliche pit
7. Cratered area



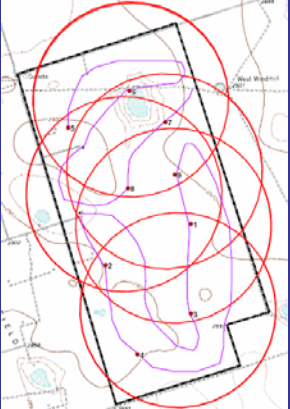
Target Range No. 14

1946 Aerial Photo



**Fort Worth District**

**SI Technical Approach**



**Target Range No. 14**

Dates Used: 1942 -1946


Potential Munitions: M38A2 100-lb Practice Bomb with M1A1 spotting charge; M47 sand-filled bomb; M85 concrete bomb, AN-M30 General Purpose Bombs; M26 aircraft parachute flare

Current Land Use: Oil and gas production, cattle grazing

**Proposed MC Sampling:**

Sample Locations: 9 soil sample locations (#1-9)

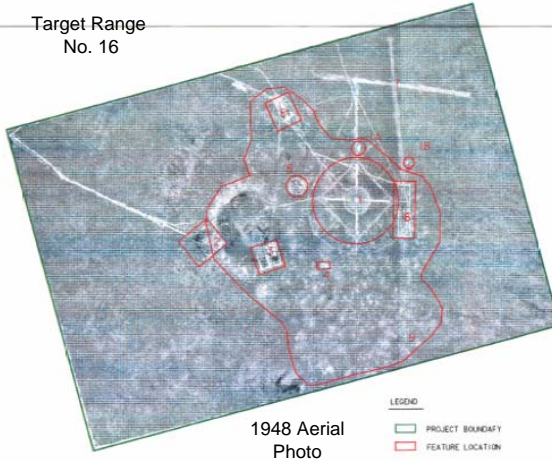
Analytical Parameters/Methods: Explosives (SW8330); Lead (SW-6020); White phosphorous (Lab SOP OP-SW-7580) – two soil samples only



**ASR Features**

1. Day Target
2. Square Night Target
3. Square Combat Target
4. Small Rectangular Target
5. Circular Combat Target
6. Battleship Target
7. Landing Field
8. Caliche Pit
9. Ground Scars


### Target Range No. 16



1948 Aerial Photo

LEGEND

PROJECT BOUNDARY
  FEATURE LOCATION



## Fort Worth District

### SI Technical Approach

### Target Range No. 16

Dates Used: 1942 -1946


Potential Munitions: M38A2 100-lb Practice Bomb with M1A1 spotting charge; M47 sand-filled bomb; M85 concrete bomb; M26 aircraft parachute flare


Current Land Use: oil and gas production, cattle grazing

**Proposed MC Sampling:**

Sample Locations: 6 soil sample locations (#1-6), one groundwater sample (#1)

Analytical Parameters/Methods: Explosives (SW8330); Lead (SW-6020); White phosphorous (Lab SOP OP-SW-7580) – two soil samples only






**ASR Features**

1. Day Target
2. Square Night Target
3. Square Combat Target
4. Small Rectangular Target
5. Circular Combat Target
6. Battleship Target
7. Landing Field
8. Caliche Pit/Ground Scars


### Target Range No. 17



1948 Aerial Photo

LEGEND

PROJECT BOUNDARY
  FEATURE LOCATION



## Fort Worth District

### SI Technical Approach

### Target Range No. 17

Dates Used: 1942 -1946


Potential Munitions: M38A2 100-lb Practice Bomb with M1A1 spotting charge; M47 sand-filled bomb; M85 concrete bomb; M26 aircraft parachute flare

Current Land Use: Oil and gas production, cattle grazing

**Proposed MC Sampling:**

Sample Locations: 8 soil sample locations (#1-8), one groundwater sample (GW1)

Analytical Parameters/Methods: Explosives (SW8330); Lead (SW-6020); White phosphorous (Lab SOP OP-SW-7580) – two soil samples only





## Fort Worth District

### Site History – Midland AAF *Once Upon a Time....*

- 1930s: U.S. Army used Sloan Field intermittently for re-fueling.
- 1941 – 1946: U.S. Army acquired 1,680 acres of land and used it as Midland AAF.
- 1947: Certificate of Deduinding issued. DoD released land back to the City of Midland.



## Fort Worth District

### Findings to Date – Midland AAF

- **ASR**
  - Site Visit by USACE.
  - MD reportedly observed during construction of additional terminal facilities and on ground surface in suspected burial pit area.
  - No MEC observed and none reported.
- **2004 ASR Supplement**
  - Risk Assessment Code of 5 for three munitions response sites (two burial pits and a skeet range)

### Current Conditions

- Midland Airport.
- No known deed restrictions.



## Fort Worth District

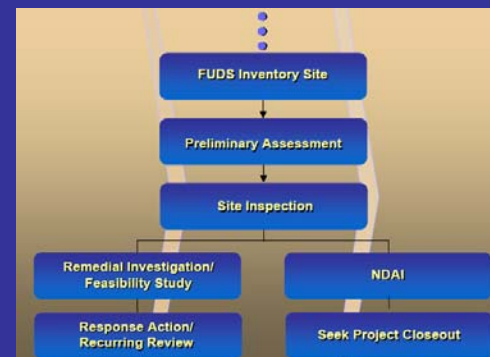
### Anticipated Outcome – Midland AAF

- No MEC has been found. However, MD has been identified during terminal construction activities and in suspected burial pit area.
- QR to evaluate the presence or absence of residual MEC.
- MC sampling – Focused on potential for explosives and indicator metals contamination in soil at burial pits. PAHs and small arms indicator metals in soil. Groundwater if operational well is present.
- SI activities tailored to support either RI/FS or NDAI.



## Fort Worth District

### Anticipated MMRP SI Process Flow Outcome *Midland AAF*





## Fort Worth District

### SI Technical Approach – Target Ranges

In accordance with SI guidance, the primary objective for the Midland AAF site can be attained by implementation of the following Technical Approach:

- **Qualitative Reconnaissance (QR)**
  - Visual survey. Focused on the skeet range and in the burial pit area.
- **MC Sampling**
  - Sample Media: Soil. Groundwater near the skeet range.
  - Soil Sample Depth: 2 inches
  - Sample Locations: Biased toward the highest potential for contamination. Proposed flexibility of 100'.



## Fort Worth District

### Conceptual Site Model – Midland AAF

- Three MRSs included in ASR Supplement: Skeet Range and two potential Burial Pits.
- Currently Midland Airport.
- No MEC findings reported to date.
- MD observed at burial pit area.
- No known historical or cultural features.
- No wetlands or ecologically important features.

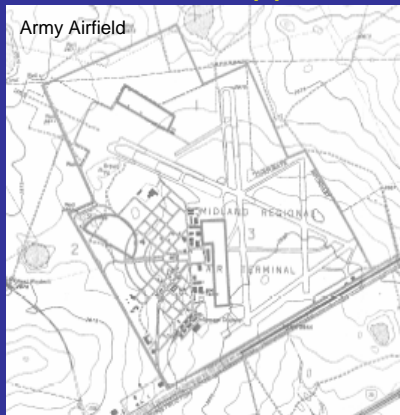


## Fort Worth District

### SI Technical Approach

ASR Features

1. Ordnance Storage Area – Burial Pits
2. Skeet Range
3. Terminal Building



## Fort Worth District

### SI Technical Approach



#### Army Airfield – Skeet Range

Size: 30 acres

Dates Used: 1941 -1947

Potential Munitions: Small Arms


Current Land Use: Municipal Airport

#### Proposed MC Sampling:

Sample Locations: 4 soil sample locations (#3-6), one groundwater sample (#GW1)

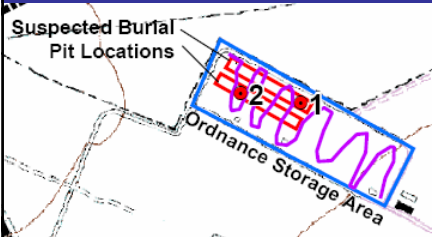
Analytical Parameters/Methods: PAHs (SW8270C); Lead, Antimony, and Copper (SW-6020)





**Fort Worth District**

## SI Technical Approach



**Army Airfield – Burial Pits**

Size: <1 acre each

Dates Used: 1946


Potential Munitions: M38A2 100-lb Practice Bomb with M1A1 spotting charge

Current Land Use: Municipal Airport

**Proposed MC Sampling:**

Sample Locations: 2 soil sample locations (#1-2)

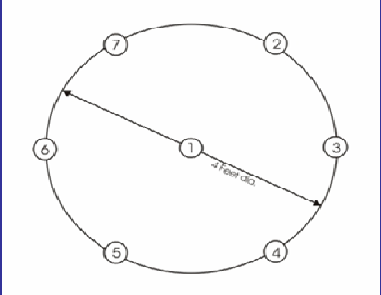
Analytical Parameters/Methods: Explosives (SW8330); Lead (SW-6020)




**Fort Worth District**

## SI Technical Approach

- **MC Sampling (continued)**
  - Soil Sample Layout: Cold Regions Research Laboratory seven-wheel sampling approach.





**Fort Worth District**

## SI Technical Approach

- **Human Health Screening**
  - Soil
    - Compare results to Texas Risk Reduction Program (TRRP) Tier 1 commercial/industrial 30-acre Protective Concentration Limits (PCLs);
    - Use Texas-specific background and quantitation limit as allowed by TRRP;
    - If there isn't a TRRP PCL for any compound, use USEPA Region 6 Soil Screening Level (SSL).
  - Groundwater
    - TRRP Tier 1 commercial/industrial 30-acre PCLs.



**Fort Worth District**

## SI Technical Approach

- **Ecological Screening**
  - Confirm the sites are not ecologically important places.
  - Identify valuable ecological resources.
    - Any specific local populations or specific local communities of interest associated with a nationally or locally important ecological place.
    - Example valuable ecological resources:
      - Wetlands;
      - Endangered species;
      - Habitat for fisheries, game species;
      - Those important to stakeholders that have intrinsic or aesthetic value.



## Fort Worth District

### SI Technical Approach

#### • Ecological Screening (continued)

- Write management goals.
  - Army goal: Protect valuable biological resources from unreasonable adverse effects due to the release of hazardous substances associated with Army operations, including Department of Defense operations for FUDs.
  - Additional goals? Examples:
    - Maintain tall grass prairie.
    - Maintain diversity of native biotic communities.
- If necessary, compare results to ecological screening benchmarks listed in “Conducting Ecological Risk Assessments at Remediation Sites in Texas.”



## Fort Worth District

### TPP Worksheet Review

Midland Army Air Field Target Range No. 14		2/14/2007
TPP Team		EM 200-1-2, Paragraph 1.1.1
Decision Makers		
Customer	USACE Fort Worth District (CESWF)	
Project Manager	Dwayne Ford, CESWF	
Regulators	Texas Commission on Environmental Quality, Roy Deen & Jill Reed; USEPA Region 6, Gary Miller	
Primary Stakeholders	Landowner, lessees	
	Data Users	Data Gatherer
Demographics/Land Use	Risk, Responsibility, and Compliance Perspectives	Parsons (Senior Scientist, Risk Specialist)
Site Conditions	Remedy Perspective	Parsons (Geologist, Senior Scientist)
Munitions and Explosives of Concern (MEC)	Risk and Remedy Perspectives	Parsons (UXO Technician III or higher, Risk Specialist, Senior Scientist)
Munitions Constituents (MC)	Risk and Remedy Perspectives	Parsons (Chemist, Risk Specialist, Senior Scientist)
Archaeology	Compliance and Remedy Perspectives	CESWF, Parsons (Staff Scientist, Senior Scientist)
Endangered Species	Risk and Compliance Perspectives	CESWF, Parsons (Staff Scientist, Risk Specialist)



## Fort Worth District

### TPP Worksheet Review (cont.)

CUSTOMER'S GOALS		EM 200-1-2, Paragraph 1.1.2	
Areas of concern (AOC)	Contaminant Issues	Future Land Use	Site-specific Closeout Goal (if applicable)
Precision Bombing Range	MC/MEC	Agricultural (Cattle Grazing)	See below
Site Closeout Statement			
To manage the munitions and explosives of concern (MEC) and munitions constituents (MC) risk through a combination of remedial action, administrative controls, and public education, thereby rendering the site as safe as reasonably possible to humans and the environment and conducive to the anticipated future land use.			
Customer's Schedule Requirements			
Site Investigation and Reporting Complete by <b>April 18, 2008</b>			
Customer's Site Budget			
Site Investigation and Reporting: Fully funded for SI phase			



## Fort Worth District

### TPP Worksheet Review (cont.)

IDENTIFY SITE APPROACH		
EXISTING SITE INFORMATION & DATA		
Attachment(s) to Phase I TPP Memorandum	Located at Repository	Preliminary Conceptual Site Model
Preliminary Assessment (Archives Search Report)	N/A for SI Phase; implemented in post-SI Phase as warranted	No
Site-Specific SI Work Plan	N/A for SI Phase; implemented in post-SI Phase as warranted	Yes
POTENTIAL POINTS OF COMPLIANCE		
EM 200-1-2, Paragraph 1.2.1.3		
Determination of absence or presence of MEC/MC		
If MC is detected, comparison against TRRP industrial 30-acre Protective Concentration Limits (PCLs) (in absence of PCL, use USEPA Region 6 HRSI.s) to determine if further MC evaluation during RIFS is warranted.		
Use of regional background or MQL if higher, as allowed by TCEQ		
Avoidance of sensitive conditions: wetlands, endangered species, archaeological sites		
MEDIA OF POTENTIAL CONCERN		
EM 200-1-2, Paragraph 1.2.1.4		
Qualitative review of MEC presence.		
Quantitative screening of MC in soil		
SITE OBJECTIVES		
EM 200-1-2, Paragraph 1.2.2		
Collection of sufficient MEC and MC data to support the RIFS or NDAI.		
Eliminate from further consideration those releases that pose no significant threat to public health or the environment.		
Collection of sufficient data to perform MRSPP scoring and USEPA to conduct MC-related HRS		
Completion of the SI.		
See Programmatic and Site-Specific Work Plan		
See Attached Worksheets Developed by the Project Team		





## Fort Worth District

### TPP Worksheet Review (cont.)

REGULATOR AND STAKEHOLDER PERSPECTIVES		EM 200-1-2, Paragraph 1.2.3
Regulators		Community Interests / Others
TBD at TPP Meeting		TBD at TPP Meeting
PROBABLE REMEDIES		EM 200-1-2, Paragraph 1.2.4
RIFS characterization, if not NDAI		
Institutional controls / public education		
Remedial Action		
EXECUTABLE STAGES TO SITE CLOSEOUT		EM 200-1-2, Paragraph 1.2.5
Site Inspection		
NDAI, portions as appropriate		
RIFS		
Proposed Plan		
Decision Document		
Remedial Design (RD)		
Remedial Action (as necessary)		
Longterm Management		
Recurring Review		



## Fort Worth District

IDENTIFY CURRENT PROJECT		
SITE CONSTRAINTS AND DEPENDENCIES		
EM 200-1-2, Paragraph 1.3.1		
Administrative Constraints and Dependencies		
Rights of Entry (ROE)		
Fieldwork schedule coordination		
Cultural Resources		
Funding beyond the SI		
Concurrent planning programs		
Scheduling		
Technical Constraints and Dependencies		
Property owner/leaseholder site activities (Site access)		
MEC avoidance screening of MC sample locations for safety		
Cultural Resources		
Topography/vegetation		
Environmentally sensitive areas		
Minimize impact to cattle and petroleum exploration operations		
Legal and Regulatory Milestones and Requirements		
Consistent with CERCLA and NCP, and applicable state and federal regulations		
Public stakeholder and regulatory involvement and review of key documents (see schedule)		
Soil screening levels to include the most conservative of the Texas Risk Reduction Program (TRRP)		
Commercial/Industrial Tier 1 30-acre Protective Concentration Levels (PCLs), EPA Region 6 Industrial Medium-Specific Screening Levels (MSSLs) will be used if TRRP PCLs have not been established for a particular constituent.		
Regional background levels will be used to assess metals.		
Seek regulatory concurrence on key documents.		
CURRENT EXECUTABLE STAGE		
EM 200-1-2, Paragraph 1.3.3		
Site Inspection (TPP Memorandum, Site-Specific Work Plan, SI Report Recommendation with TPP Mtg #2)		
Basic	Optimum	Excessive
(For Current Projects)	(For Future Projects)	(Objectives that do not lead to site closeout)
Site Inspection	RIFS or NDAI	



## Fort Worth District


PROJECT OBJECTIVES WORKSHEET						
SITE: Precision Bombing Range						
PROJECT: Midland Army Air Field Target Range No. 14						
PAGE 1 of 1						
Site Objective <sup>a</sup>		Data Needs		Data User(s)		Project Objective Classification <sup>e</sup>
Number	Executable Stage <sup>b</sup> Current Future	Description	Source <sup>c</sup>			
1	Yes	Determine presence/lack thereof of MEC	ASR, Recon	Are there any MEC? If so what type are they, where are they and what hazard do they pose. Current and future LU.	Qualitative Recon	Risk and Remedy Perspectives
2	Yes	Determine if the concentration of MC is high enough to pose a risk to human health or the environment	Soil sampling	Is there any MC present in soil samples #1 through #7? If present, what is it? To what degree is it present? Is it above the designated comparison criteria? And if so, is action required? Current and future LU.	Sample collection IAW PSAP and SS-SAP	Risk and Remedy Perspectives



## Fort Worth District

### DQO Worksheet Review

DATA QUALITY OBJECTIVE WORKSHEET		
SITE: Midland Army Air Field Target Range No. 14		
PROJECT: MMRP Site Inspection / FUDS No. K06TX018601		
DQO STATEMENT NUMBER: 1 of 4		
DQO Element Number <sup>a</sup>	DQO Element Description <sup>b</sup>	Site-Specific DQO Statement
Intended Data Use(s):		
1	Project Objective(s) Satisfied	Evaluate presence/lack thereof of MEC
Intended Need Requirements:		
2	Data User Perspective(s)	Risk, Remedy
3	Contaminant or Characteristic of Interest	MEC, Munitions Debris
4	Media of Interest	N/A
5	Required Sampling Locations or Areas and Depths	Focus on known training area; 2" depth composite sampling
6	Number of Samples Required	N/A
7	Reference Concentration of Interest or Other Performance Criteria	Indications of targets or impact areas. Visual confirmation of MEC.
Appropriate Sampling and Analysis Methods:		
8	Sampling Method	Qualitative Reconnaissance with Schonstedt Instrument
9	Analytical Method	N/A



## DQO Worksheet Review


DATA QUALITY OBJECTIVE WORKSHEET

SITE: Midland Army Air Field Target Range No. 14

PROJECT: MMRP Site Inspection / FUDS No. K06TX018601

DQO STATEMENT NUMBER: 2 of 4

DQO Element Number <sup>a</sup>	DQO Element Description <sup>a</sup>	Site-Specific DQO Statement
<b>Intended Data Use(s):</b>		
1	Project Objective(s) Satisfied	Evaluate presence/lack thereof of MC
<b>Intended Need Requirements:</b>		
2	Data User Perspective(s)	Risk, Remedy
3	Contaminant or Characteristic of Interest	Explosives, white phosphorous, and lead
4	Media of Interest	Surface Soil (source determined during TPP process)
5	Required Sampling Locations or Areas and Depths	To be determined by the Project Team, see Figures 3A and 3B. Locations based on range location.
6	Number of Samples Required	9 surface soil samples, plus associated QC samples
7	Reference Concentration of Interest or Other Performance Criteria	Texas Risk Reduction Program Commercial/Industrial Tier 1 30-acre PCLs (in the absence of TRRP PCL, USEPA Region 6 Residential MSSL)
<b>Appropriate Sampling and Analysis Methods:</b>		
8	Sampling Method	Composite samples in accordance with the PSAP and PSAP Addendum
9	Analytical Method	Explosives - SW8330; Metals (SW6010/SW6020), White phosphorous OP-SW-7580 Revision 1 (DataChem Laboratories, Inc.)



## DQO Worksheet Review


DATA QUALITY OBJECTIVE WORKSHEET

SITE: Midland Army Air Field Target Range No. 14

PROJECT: MMRP Site Inspection / FUDS No. K06TX018601

DQO STATEMENT NUMBER: 3 of 4

DQO Element Number <sup>a</sup>	DQO Element Description <sup>a</sup>	Site-Specific DQO Statement
<b>Intended Data Use(s):</b>		
1	Project Objective(s) Satisfied	Completion of MRSPP Scoring sheets
<b>Intended Need Requirements:</b>		
2	Data User Perspective(s)	Risk and Remedy
3	Contaminant or Characteristic of Interest	Explosives, chemical, and health hazards, if any, associated with field team observations
4	Media of Interest	Surface Soil (source determined during TPP process)
5	Required Sampling Locations or Areas and Depths	IAW MC DQO
6	Number of Samples Required	IAW MC DQO
7	Reference Concentration of Interest or Other Performance Criteria	Completion of Explosive Hazard Evaluation (EHE) Tables 1-10, Chemical Warfare Materiel Hazard Evaluation (CWMHE) Tables 11-20, and Health Hazard Evaluation (HHE) Tables 21-25
<b>Appropriate Sampling and Analysis Methods:</b>		
8	Sampling Method	N/A
9	Analytical Method	N/A



## DQO Worksheet Review


DATA QUALITY OBJECTIVE WORKSHEET

SITE: Midland Army Air Field Target Range No. 14

PROJECT: MMRP Site Inspection / FUDS No. K06TX018601

DQO STATEMENT NUMBER: 4 of 4

DQO Element Number <sup>a</sup>	DQO Element Description <sup>a</sup>	Site-Specific DQO Statement
<b>Intended Data Use(s):</b>		
1	Project Objective(s) Satisfied	Collection of USEPA HRS MC-related information
<b>Intended Need Requirements:</b>		
2	Data User Perspective(s)	Risk, Compliance, and Remedy
3	Contaminant or Characteristic of Interest	Explosives and metals associated with range and the observations of the field team
4	Media of Interest	Surface Soil (source determined during TPP process)
5	Required Sampling Locations or Areas and Depths	IAW MC DQO
6	Number of Samples Required	IAW MC DQO
7	Reference Concentration of Interest or Other Performance Criteria	Results of the MC analytical testing for USEPA to complete the MC-related HRS scoring
<b>Appropriate Sampling and Analysis Methods:</b>		
8	Sampling Method	N/A
9	Analytical Method	N/A



## Fort Worth District

# TPP Meeting Closure Issues

- Concurrence –
  - Sampling Program (number, depth, locations, parameters)
  - Technical Approach
  - Ecological resources management goals
  - Screening Values for human health and ecological risk assessments
  - DQOs and TPP Worksheets
- Other Issues/Notes –
  - Slides presented here will be included in TPP Memo.
  - Need for expedited review?
  - Area Access Limitations
  - Field Schedule...Anticipated to commence October 2007.
  - Timeframes to avoid fieldwork?
  - Other logistical concerns?



Fort Worth District

**Questions?**